Volume XXXV.
Number 3.

JUNE, 1908.

$2.00 per year.
$3.00 with Directory.

1868 TEXTILE 1908
WORLD RECORD

Special Features

The False Packing of Wool.

The Meeting of the American Cotton Manufacturers' Association at Richmond.

The Convention of the Knit Goods Manufacturers' at Philadelphia.

Bagging for Cotton Bales.

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LORD & NAGLE COMPANY · BOSTON, MASS.

JOHN JEPSON, BOSTON.

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Table of Contents, Page 63. Buyers Index, Page 203. Index to Advertisements, Page 213.

The Textile-Finishing Machinery Co.

HOWARD BUILDING

STAIRWAYS, 83 EXCHANGE PLACE [ENTRANCES] ELEVATOR, 171 WESTMINSTER ST.

PROVIDENCE, R. I.

BUILDERS OF ALL KINDS OF

MACHINERY

FOR

BLEACHING
DYEING
DRYING

AND

FINISHING

Singeing Machines,

Boiling Kiers,

Washers, Squeezers,

Chemic and Sour

Rusden Patent

Continuous Chainless

Steamer,

Aniline Agers,

Dyeing Machines,

Open Soapers,

Blanket Washers,

Color Kettles,

Horizontal or Vertical Drying Machines, with Copper or Tinned Iron Cylinders,

Automatic Tentering Machines,

Water and Starch Mangles,

Dampening Machines,

Dyeing Machines for Chain Warps.

Calenders for Rolling, Glazing, Chasing and Embossing, also Calenders for Moire Finish.

Sole Manufacturers of Patented Flexible Cloth Expander for Cylinder Drying Machines, Calenders Mangles, &c.

Patent Combination Rolls Made of Cotton and Husk, especially adapted for Sof Finish, Unequalled for Elasticity and Durability.

Cotton, Paper, Husk, Chilled Iron, Brass and Rubber Rolls, Electro-deposited Copper Rolls for all Purposes.

Padding and Drying Machines for Shade Cloths.

Single and Double Cylinder Engines.

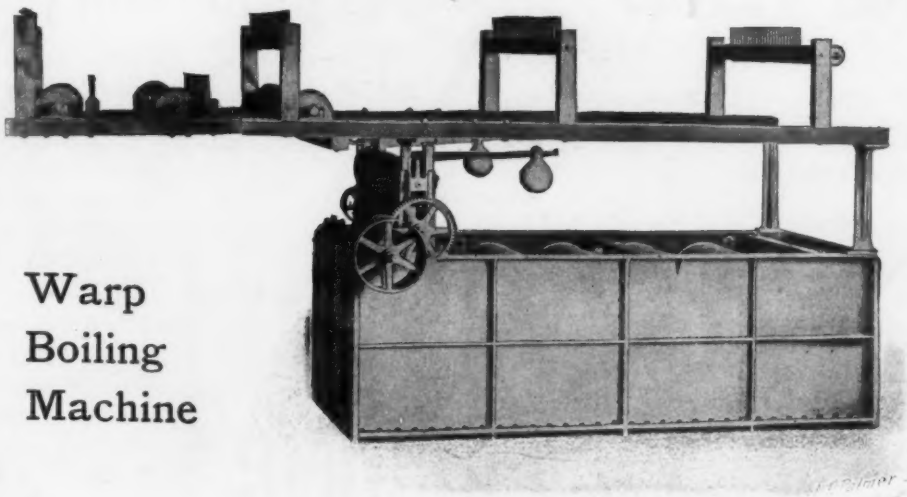
Hydraulic Presses and Pumps.

Mercerizing Machinery for Piece Goods and Yarn in the Warp or Chain

ALL KINDS OF OUTFITS FOR BLEACHING THREAD AND SOFT TWISTED YARN.
BLEACHING MACHINERY FOR YARNS IN THE WARP OR CHAIN.

Estimates, Drawings and full particulars of complete plants furnished on application

Southern Agent, STUART W. CRAMER, Charlotte, N. C., Equitable Building, Atlanta, Ga.



Warp
Boiling
Machine

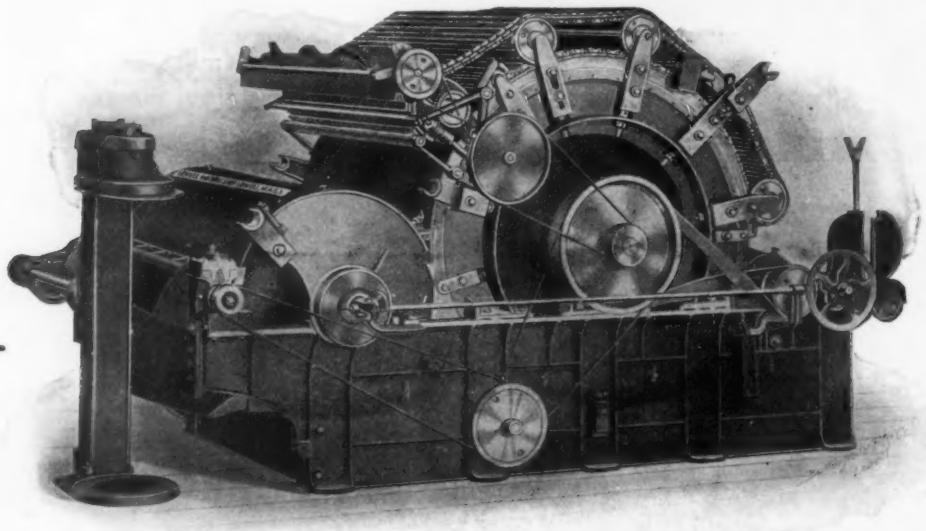
Bleaching,
Dyeing,
Drying,
Finishing
Machinery

for all textile fabrics.

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

Providence Office, Room 417, Industrial Trust Building.



Cotton and Worsted Machinery

With Modifications to Suit Any Class of Work.

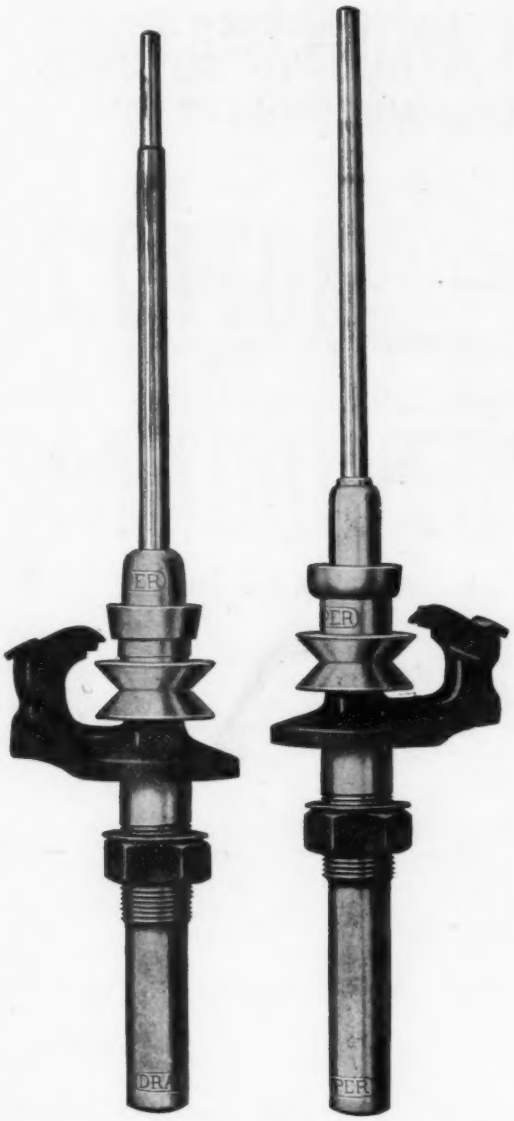
Cotton Machinery: Cards, Railway Heads, Drawing Frames, Fly Frames, Speeders, Ring Spinning Frames, Twisters, Spoolers, Reels, Warpers, Slashers, Winders, Looms, Shearing Machines, Balling Machines, Folders, Stamping Machines, Sewing Machines, Size Pumps, Size Kettles, Drawing-in Frames, Baling Presses, Indigo Grinders.

Worsted Machinery: Spinning Frames with caps, rings or flyers, Dandy Rovers and Reducers, Cone Second Finishers, Reducers and Rovers, Gill Boxes for Drawing, Preparing and Finishing, Weigh Boxes and Drawing Boxes, Cap Trap, Flyer and Ring Twisters.

Plans, Specifications and Estimates furnished upon application.

Lowell Machine Shop

LOWELL, MASS.



Two New
Large Size
Spinning Spindles.

We make

Draper,
Whitin,
McMullan

and other
types of

Spindles;

also

Northrop Looms,

Twisters,
Warpers,
Spoolers,
Reels,

Banding Machines,

etc., etc.

Draper Company,
HOPEDALE,
MASS.

THE EMPHATIC SUCCESS OF OUR "IDEAL" AUTOMATIC LOOM IS DUE TO SEVERAL SALIENT POINTS OF SUPERIORITY OVER ALL COMPETITORS:

1st. The ease and smoothness with which they start up.

2d. The acknowledged superiority of the cloth woven.

3d. Simple and thoroughly mechanical construction, assuring freedom from the constant breakage and expensive repairs attending other automatic looms.

4th. No special bobbins, shuttles or other expensive parts.

5th. Ability to use cop or bobbin filling interchangeably.

6th. Superiority of warp stop motion which does not break or fray the softest yarn.

7th. Of the thousands in operation not a single bobbin or crank shaft broken.

IN PROOF OF CLAIMS WE POINT TO THOSE MILLS FORMERLY USING OUR COMPETITORS' LOOMS THAT ARE NOW USING OURS.

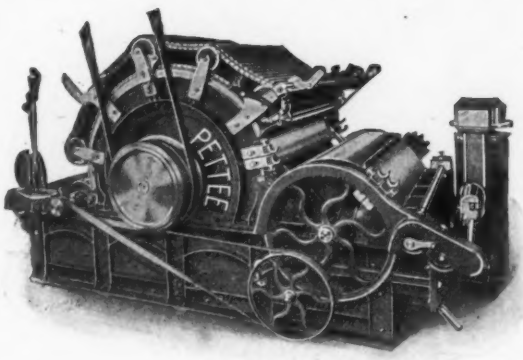
The Stafford Company

Readville, Mass.

Saco and Pettee Machine Shops

NEWTON UPPER FALLS, MASS., U. S. A.

COTTON MACHINERY



Shops—

Biddeford, Me.

Newton Upper Falls, Mass.

Revolving
Flat Cards,
Drawing
Frames,
Railway Heads,
Slubbing,
Intermediate
and
Roving
Frames,
Spinning Frames,
Spoolers
and
Reels.

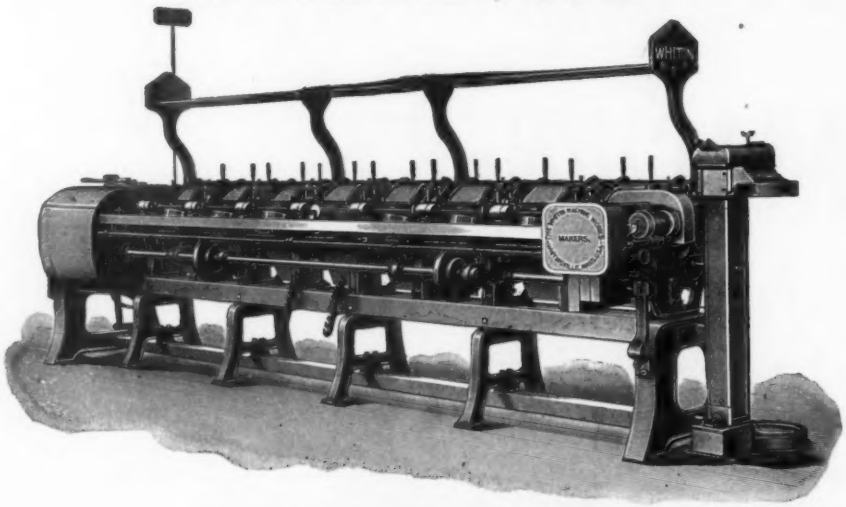
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

THE

WHITIN MACHINE WORKS,

Cotton Machinery

WHITINSVILLE, MASS.



HIGH SPEED COMBER 1906 MODEL.

Revolving Flat Carding Engines,
Sliver Lap Machines,
Ribbon Lap Machines, Combers,
Railway Heads, Drawing Frames,
Spinning Frames, Spoolers, Twisters,
Long Chain Quilling Machines, Reels, Looms.

Southern Agent,
S. W. CRAMER

Trust Building, CHARLOTTE, N. C.
Equitable Building, ATLANTA, GA.

"Kitson Products"

Blowing Systems

For Conveying Bale Cotton
from Storehouse to Picker-room

Self-Feeding Openers
Lappers and
Cleaning Trunks

Waste-Working Machinery

Raw Stock Cotton Dryers

We own the Patterns and can furnish REPAIR PARTS for PICKERS
formerly built by

WHITEHEAD & ATHERTON, . Lowell, Mass.
ATHERTON MACHINE CO., - - Lowell, Mass.
A. T. ATHERTON MACHINE CO., Pawtucket, R. I.

Kitson Machine Shop

Lowell, Mass.

SCOTT & WILLIAMS

2079 E. Cumberland Street, Philadelphia, Pa., U. S. A.

BUILDERS OF

Full Particulars, Samples nnd Special Catalogues on Application.

Rib Knitting Machinery for Underwear and Hosiery

Plain, Single Lever or with Welt, Slack Course and Automatic Slackening Device for Welt.

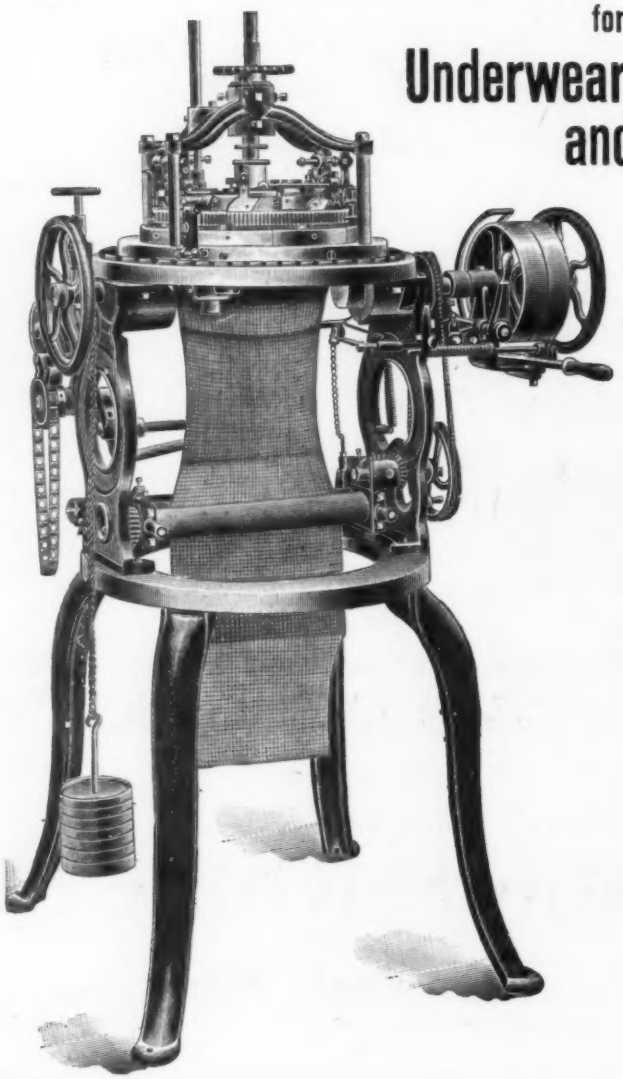
Improved Measuring Device, by actual length knit.

Sizes 8 to 24 inches, inclusive, varying by one inch.

Number of Feeds, 4 to 12, according to style and diameter of machine.

Solid Forged Steel Cylinders, specially hardened or with patent inserted walls for fine fabric.

Special Machinery for Sweaters, etc.



The illustration shows our

Improved High Speed Single Lever Automatic Ribbed Underwear Machine

for making ladies' and gents' ribbed underwear, union suits, etc., plain and shaped.

We build Loopers, Ribbers and other Machinery for Knitting Mills

As well as

A Complete Line of Full Automatic and 7-8 Automatic Seamless Hosiery Machinery.

Yarn in the Shuttle
is Almost Cloth

After the many costly processes of spinning and finishing

Waste in the Shuttle

means manifold loss

The No. 90 Universal Bobbin Winder Stops this waste

Furthermore:

It increases the yardage in a shuttle two to four fold, adding 40 to 60 per cent. to a weavers production. It also winds bobbins that run off "clean" without break or "slough off," thereby reducing the number of "seconds."

Universal Filling requires no conditioning; it reduces the cost of weaving woolens, cotton and silk.

"UNIVERSAL WIND"—the regular systematic laying of fibre, without strain or disturbance of the twist, to form a self sustaining package—was a discovery. It differes radically from all forms of "drum" or "frictional" wind. With "Universal Wind" the "spacing" with which a package starts to build remains constant throughout, but any degree of "openness" can be secured. **Universal Winding Machines** give a maximum production in a minimum floor space.

Universal Winding Company

95 South Street, Boston, Mass., U. S. A.

INTERNATIONAL WINDING COMPANY

Saville St., Oxford Road, Manchester, England

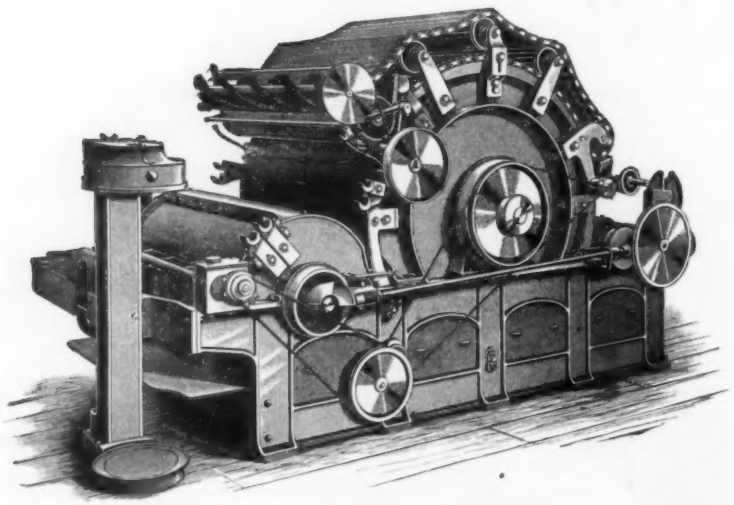
16 St. Johannvorstadt, Basel, Switzerland

Cotton Machinery

MASON MACHINE WORKS,

TAUNTON, MASS.

Southern Office,
Charlotte,
N. C.



Cards,
Combers, Railway
Heads, Drawing Frames
Spinning Frames, Mules and Looms

INCLUDING

Plain and Fancy Silk Looms

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

SOLE AGENT

IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber will comb from 7-8" stock to Sea Islands.
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.
Archbutt-Deeley System for purifying and softening water.

TEXTILE MACHINERY ASSOCIATION, LTD.

Flax, Hemp and Jute Machinery.

GEORGE HODGSON, LTD.

Looms for Worsteds, etc.

THE PATENT AUTOMATIC FEEDING MACH. CO., LTD.

Patent Feeding Machines for wool, cotton, flax, fur and fibrous material.

JOSEPH SYKES BROS.,
Card Clothing for Cotton.

JAMES CRITCHLEY & SON'S,
Card Clothing for Woolen and Worsted.

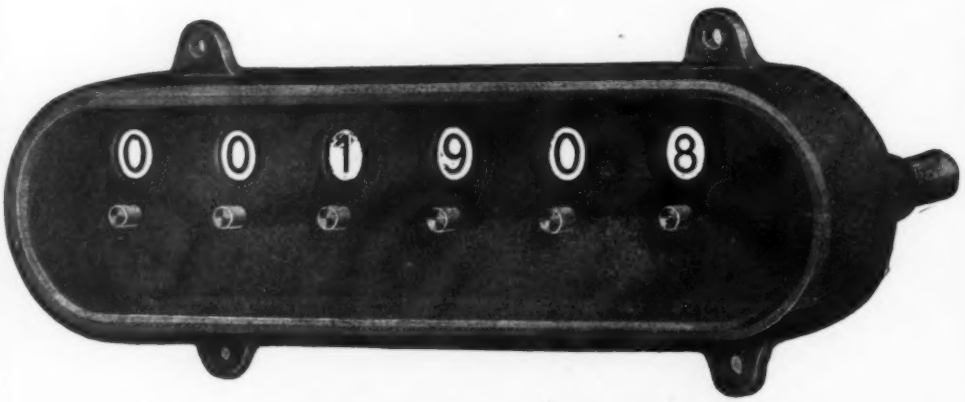
DRONSFIELD BROS'.

Grinding Machinery and Emery Filleting. The Best French and English Combing and Rubbing Aprons. Harding's Pins and Circles. Varey's Fallers, etc.

Measuring and Counting Attachment for Textile Machinery

On Dryers, Scutchers, Winding, Folding, Printing and other machines the exact yardage is constantly shown.

On Looms they can be arranged to indicate exactly the number of picks woven.



Know the output of your machines

Representative mills and bleacheries are using these attachments on various machines and they are constantly being applied to new uses.

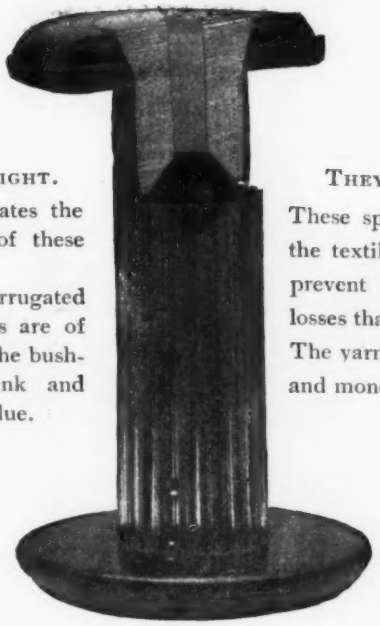
Some large mills use them to count the revolutions of pumps and engines; others to record water wheel speed.

Different styles can be adapted to various purposes and requirements. We would be glad to hear from you.

Send for Catalog No. 18.

The C. J. Root Co., Bristol, Conn.

RHODE ISLAND FIBER SPOOLS



THEY ARE BUILT RIGHT.

The engraving illustrates the construction of one of these spools.

The barrel is of corrugated tinned steel, the heads are of waterproof fiber, and the bushings of birch (shrunk and waterproofed). No Glue.

THEY DO NOT BREAK.

These spools are important to the textile world because they prevent some of the small losses that eat up profits.

The yarn is protected and time and money are saved.

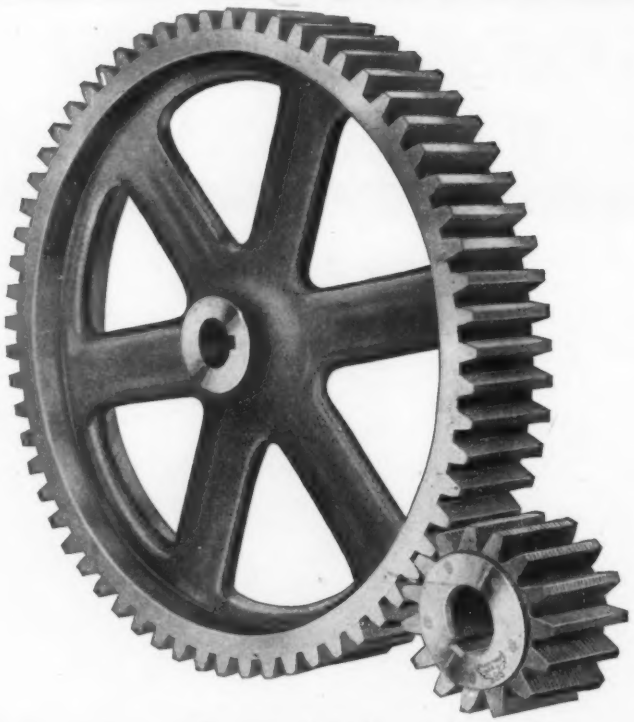
MANUFACTURED BY THE
RHODE ISLAND FIBER SPOOL CO.,
PROVIDENCE, R. I.

Write for Free Sample to

SALES AGENTS

CELL DRIER MACHINE CO.
TAUNTON, MASS.

GREENSBORO SUPPLY CO.
GREENSBORO, N. C.



Now is the Time to Equip With New Process Noiseless Pinions

There are doubtless some places about every plant where the racket made by metal gears is a nuisance and the quiet running of New Process Noiseless Pinions would be a vast improvement. The pressure of business, however, for the past two years has kept most factory managers so busy that they have had no time to consider such refinements of their equipment. The present slackening in the rush should be taken advantage of to look into this matter and to prepare to have the benefit of Noiseless Gearing during the busy times which are soon to come. We will be glad to send our descriptive catalog for the asking.

The New Process Raw Hide Company

Syracuse, New York

JAMES HUNTER MACHINE CO.

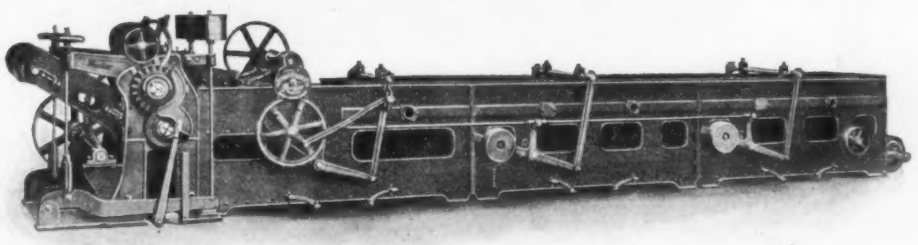
NORTH ADAMS, MASS., U. S. A.

Wool Washers. *Bulletin 54*

The Hunter

MODEL D

WOOL WASHER



Parallel Rake.

Not "A Has Been." Not "A Going To Be"
but a present day success.

Bowls 36" or 48" wide; 16-24-32 and 40 feet long.

Better work and more of it.
Large Settling Bowl giving clean scouring liquor.

Self Contained Flushing Appliance.

Better investigate.

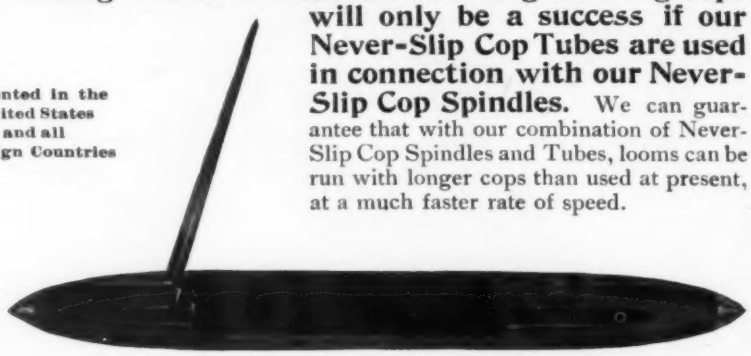
Never-Slip
Cop Spindles and Tubes

Never-Slip Cop Tube

Patent applied for.

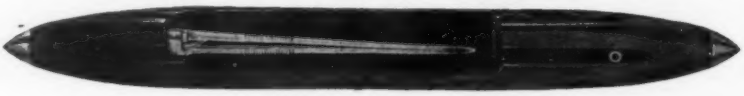
Patented in the United States and all Foreign Countries

Filling-Waste is reduced to nothing and long Cops will only be a success if our Never-Slip Cop Tubes are used in connection with our Never-Slip Cop Spindles. We can guarantee that with our combination of Never-Slip Cop Spindles and Tubes, looms can be run with longer cops than used at present, at a much faster rate of speed.



Shuttle with Spindle Raised

U. S. Patents: 778851, Jan 3, 1905; 790611, May 23, 1905; other patents pending



Shuttle with Spindle Lowered

U. S. Patents: 778851, Jan. 3, 1905; 790611, May 23, 1905; other patents pending

American Textile Specialty Machinery Co.

MANUFACTURERS OF

Shuttles and Shuttle Irons for all Textile Purposes.

New York Office, 363-373 Rider Ave. **670 Eddy St., Providence, R. I.**

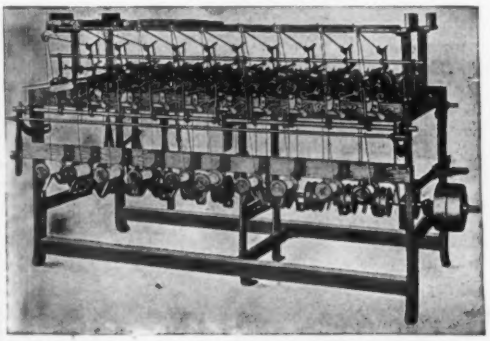
OSWALD LEVER CO.

(Formerly LEVER & GRUNDY.)

Lehigh Ave. and Mascher Sts., PHILADELPHIA, PA.

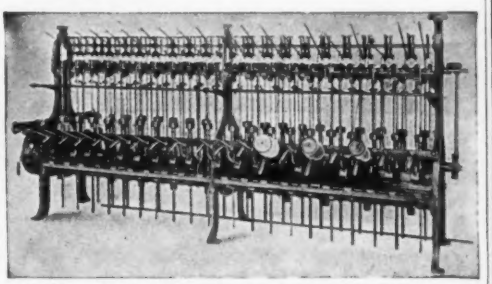
MANUFACTURERS OF TEXTILE MACHINERY.

SOLE MAKERS OF OUR PATENTED SPECIALTIES IN THE UNITED STATES.

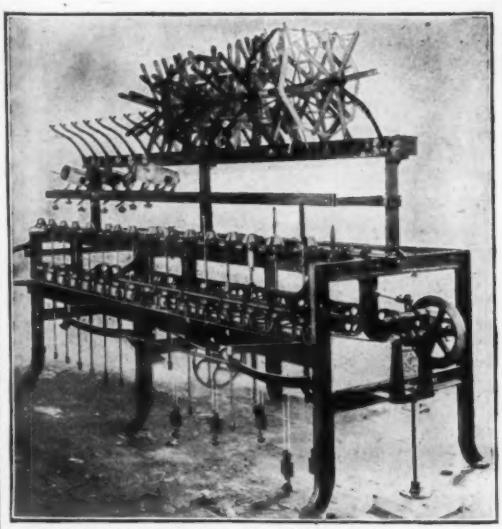


This Machine may be arranged to wind from skeins, spools, cones, or any kind of spinning bobbins. Most suitable machine for cotton or woolen blankets.

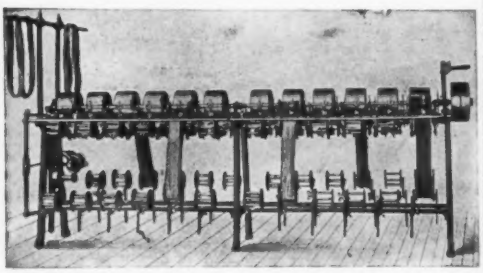
Conical and Parallel Tube Winding Machines; Warping Machines and Creels; Brass Bobbin Winding and other Machinery for lace mills; Chenille Cutting Machines, Sectional Warping Mill, Beaming Machines, etc; Cop Winding Machines for butts to weave from outside; Filling Bobbin or Quill Winding Machines; Vertical Spindle Spooling Machine for silk, fine cotton, wool and worsted; Variable Speed Bobbin Machines for large bobbins used in knitting mills; Dresser Spooling Machines; Reeling Machines.



Vertical Spindle Gear Driven Winder, as used by all manufacturers of heavy duck, jute, cotton, bagging and carpets.

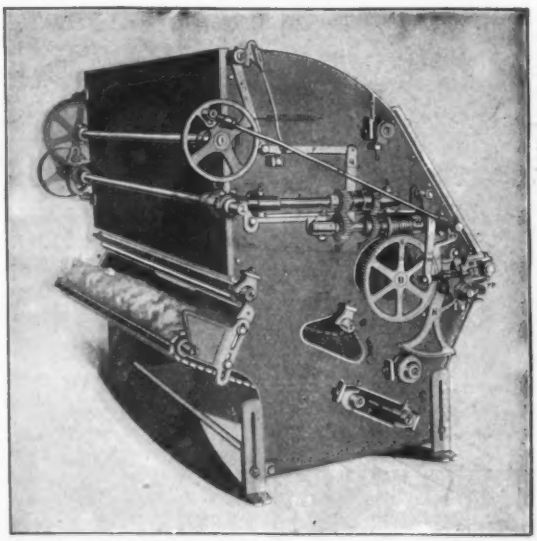


High Speed Cross Quiller to wind from skeins, spools or mule cops on two quills or paper tubes. It is built to run from 1800 to 2400 revolutions.



Pressure Drum Spooling Machine. This machine is adapted for spooling any kind of yarn, whether from mule cops or skeins.

THE FISHER PATENT CARD FEED



Write Us For List of Mills Where Machines Are Used.

Woonsocket Machine and Press Company

WOONSOCKET, R. I.

PRACTICAL FIRE PROTECTION

If you want your mill buildings properly protected against the fire hazard, thereby obtaining the lowest insurance rates, you must have a supply of water which is instantly available under high pressure and absolutely independent of the successful or immediate operation of pumps or other machinery. The old method of storing such a supply was by wood tanks, generally built on top of buildings. As these tanks are short lived they soon become, themselves, a menace to the building instead of a protector. The sudden bursting of such a tank has often done as much damage as a fire. The up-to-date method of storing water is by means of a steel tank on a steel tower. We make a specialty of the design, manufacture and erection of these tanks of any desired capacity, in any part of the country, to meet any local conditions. Our tanks are recommended by the Factory Mutual Insurance Companies and endorsed by all of our past customers. We have built about seven hundred towers and tanks in all parts of the country, about 50 of which have been erected for Textile Mills. Every one of these is giving satisfaction. Write for booklet No. 7 which gives a list of all our customers with whom we invite you to correspond. The cut shows a tank which we built for the Belton Cotton Mills, at Belton, S. C. The large tank is kept full at all times for fire protection; the small one supplies water for use in the buildings.

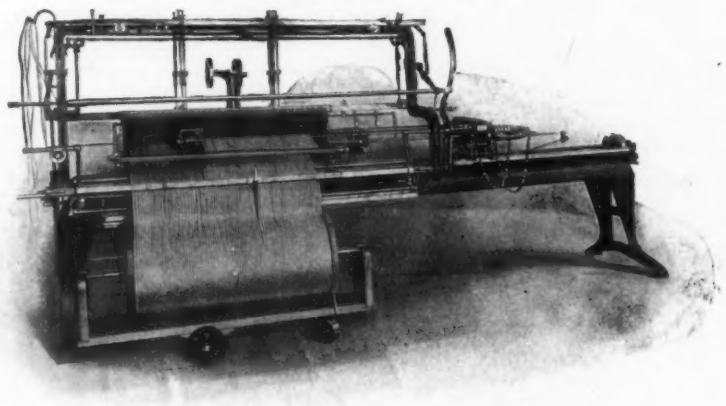
Chicago Bridge and Iron Works

105th and Troop Sts. Chicago, Ill.

Automatic Warp Drawing Machines

They are a long stride toward

Economy in Drawing-in **Better Weaving**
Greater Production **Less Loom Stoppage** **Less Help**
Less Room **Less Delay** **Less Trouble**



They Handle *The Entire* Drawing-in and

Entirely Eliminate the Old Hand Process

40,000 to 130,000 *Ends per day according to* nature of work

New Types of Machines Now Handle

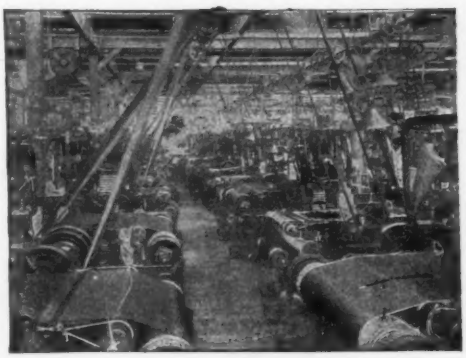
Work in cotton harness up to 120 inches wide
Draper Steel Harness
Cotton Harness and Warp Stop Motion Bars

American Warp-Drawing Machine Co.

289 A Street, Boston, Mass.

General Electric Company

Individual Drive for Textile Machines



INTERIOR OF LOOM ROOM WITH MECHANICAL DRIVE

INTERIOR OF LOOM ROOM WITH DIRECT CONNECTED INDIVIDUAL MOTORS

With the adoption of individual drive come these resultant advantages:

Each operation is independent of any other.
Machines are not limited as regards position.
Freedom to make extensions or alterations, and to run overtime in any or all departments at a cost proportionate to power used.
Department costs can be accurately determined, and a check kept on efficient working of machines and operators.

Our mill specialists are at your service

Mill Power Dep't
84 State St., Boston, Mass.

Principal Office
Schenectady, New York

Sales Offices
in All Large Cities

1713

STARCH.

Increased efficiency in

WARP SIZING

with LESS COST by using

Adhesive Value:

One pound of "C. P. SPECIAL" contains a sizing value of from one to one and a half pounds of any other starch.

"C. P. SPECIAL" requires no heavying or stocking up after standing.

Sizing Qualities:

"C. P. SPECIAL" dries without sticking on slasher cylinders.

"C. P. SPECIAL" penetrates yarn thoroughly.

"C. P. SPECIAL" increases tensile strength of yarn from 5–10 percent.

"C. P. SPECIAL" boils quickly and produces good, smooth size.

Weaving:

Warps sized with "C. P. SPECIAL" draw in and weave to entire satisfaction.

"C. P. SPECIAL" will not dust off under your looms.

Demonstration:

We are ready to demonstrate in your mill--free of cost—just what "C. P. SPECIAL" will do.

100 lbs. "C. P. SPECIAL" will be sent on request to any responsible Cotton Manufacturer for demonstration purposes.

Corn Products Refining Co., New York, N. Y.

TAPES, BRAIDS AND RIBBONS

for the Mill and Manufacturing Trade

WICK NARROW FABRIC CO.
PRODUCERS OF SPECIALTIES
726-728 Market Street, Philadelphia
Address Department Z

ESTABLISHED 1828.

Boston Belting Company

ORIGINAL MANUFACTURERS

VULCANIZED RUBBER GOODS.

Rubber Covered Rollers

NEW ROLLERS COMPLETE. *ROLLERS RE-COVERED.*

We furnish Rubber Covered Rollers for all purposes for which such rollers are or can be used in Textile Mills. The quality of our rubber coverings is rigidly maintained at its well known high standard — resulting in satisfaction and the greatest economy to the user.

The Trade-Mark of Excellence on all kinds of

HIGH GRADE MECHANICAL RUBBER GOODS

Rubber Belting

of superior quality for power transmission and the conveying of materials. Our large stock enables us to make prompt shipments.

Hose

all kinds for water, steam, air, fire protection, suction, etc. Our "AMERICAN UNDERWRITERS" Hose meets the reqnirements of all Insurance Companies.

Pump Valves, Gaskets, Springs, Washers, Etc.

JAMES BENNETT FORSYTH, Mfg. Agt. and Gen. Mgr.

Boston New York Buffalo Baltimore Atlanta New Orleans

1000 Gallons of Soft, Pure Water

20 Barrels for Two Cents

for **2c.**

for **2c.**

That is the average cost of making hard water soft with the

Dodge Automatic

"EUREKA"

Water Softener and Purifier.

For the price of a postage stamp you secure 1000 gallons of a water that will produce

Level Dyeing.

The wool is *clean* because it has been scoured and washed in water that is free from impurities that adhere to the wool, consequently the coloring matter can penetrate and affix itself in *every* portion of *every* fibre, and no *spots* or *streaks* mar the appearance of the finished piece.

Consider the SOAP SAVING—it amounts to the difference between the soap required to produce " suds " on your *hard* water as against practically a RAIN water.

It is not necessary to "doctor" our treated water.

We can CLARIFY your turbid river or lake water. By using the treated water in your boilers, as well as in the manufacturing processes, you prevent scale and all of its attendant evils and expenses.

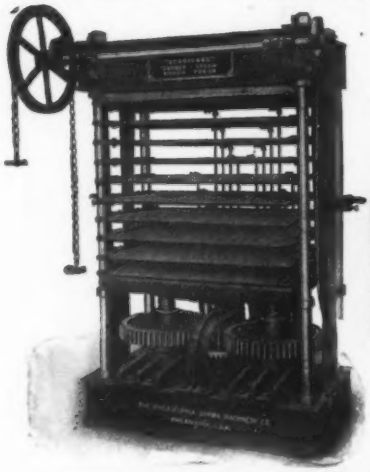
A postal card request will bring you our interesting book " No. 414" which tells all about the " Eureka " System.

Dodge Manufacturing Co., Mishawaka, Ind.

P. S.—These are some of our textile mill customers:—

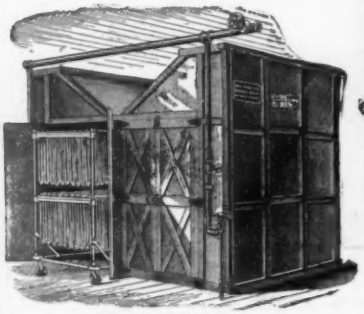
South Bend (Ind.) Woolen Co.
Cooper, Wells & Co., St. Joseph, Mich.
Burson Knitting Co., Rockford, Ill.
Kalamazoo Knitting Co., Milwaukee, Wis.
Des Moines, (Ia.) Hosiery Mills.
Ipava (Ill.) Woolen Mills.
Clinton (Mich.) Woolen Mfg. Co.
Wayne Knitting Mills, Fort Wayne, Ind.

"HURRICANE" DRYERS AND FANS



Power Screw Hydraulic and Lever **Presses**

For Wool, Cotton Stock, Yarn, Stockings, Underwear, Etc.



Truck Yarn Dryer.

BELT DRIVEN AND MOTOR DRIVEN

"Hurricane" Fan, Style No. 2. Write for Catalogues.

COMPLETE EQUIPMENTS FOR DYEING, SCOURING, BLEACHING, CARBONIZING, OXIDIZING, CHROMING, Etc.

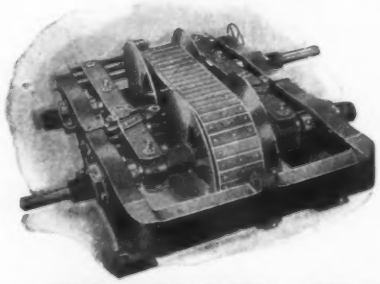
PHILADELPHIA DRYING MACHINERY CO.

6721 Germantown Ave., Philadelphia, Pa.

The QUALITY of the goods, as well as QUANTITY, is determined by the methods of manufacture.

THE MILL EQUIPPED WITH

"The Reeves" Variable Speed Transmission



for regulating the speed of the tenters, dryers, mangles, printing, bleaching, dyeing and mercerizing machines, etc., produces the best and the most at the lowest cost, because it gives the ***exact speed*** best suited to the work.

ASK THOSE USING IT.

REEVES PULLEY COMPANY,

Columbus, Indiana.

New England Agents,
Cell Drier Machine Company,
Taunton, Mass.

New York Representatives,
Patterson, Gottfried & Hunter,
146-150 Centre Street.

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Hope Foundry, LEEDS, England

BRANCH OF

Fairbairn Lawson Combe Barbour, Ltd.

MAKERS OF MACHINERY FOR

Preparing and Spinning

Flax, Hemp, Tow and Jute

Special Machinery for the Manufacture of Twines, Rope Yarns and Binder Twine

Good's Combined Hackling and Spreading Machine.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

Patent High-Speed Horizontal and Automatic Spinning Frames for Manila.

Improved Laying Machines.

Haskell-Dawes Tubing Twisters.

Brownell's Patent Twisting and Laying Machines for Twine.

N. B.—Complete Plans and Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.

Cloth Washers, Dye Tubs, Vats, Fulling Mills,
Piece Dyeing Machines, Special Machinery,
Brass Founders, Tanks, To Order.

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BRIDGETON, R. I.

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Spindles and Flyers, for Cotton, Wool, Silk, Flax, etc.

Send for our latest Catalogue and Price List

Dye Tub Valves, Cloth Guides, etc. Bronze or Porcelain Rings.

Farrel Foundry & Machine Co.

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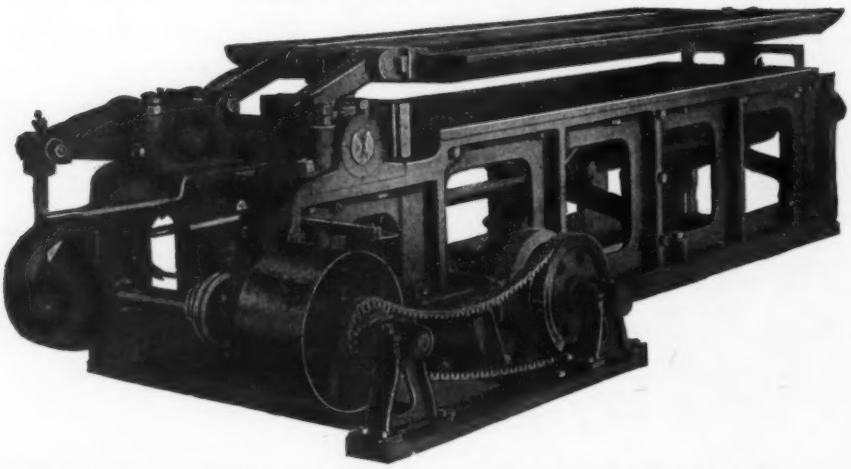

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Chilled and Soft Iron Rolls. Heavy Transmission Machinery.
Machine Moulded and Machine Cut Gearing, to 20 ft. diameter, Etc., Etc.
Heavy Castings, in Gray Iron or Semi Steel.

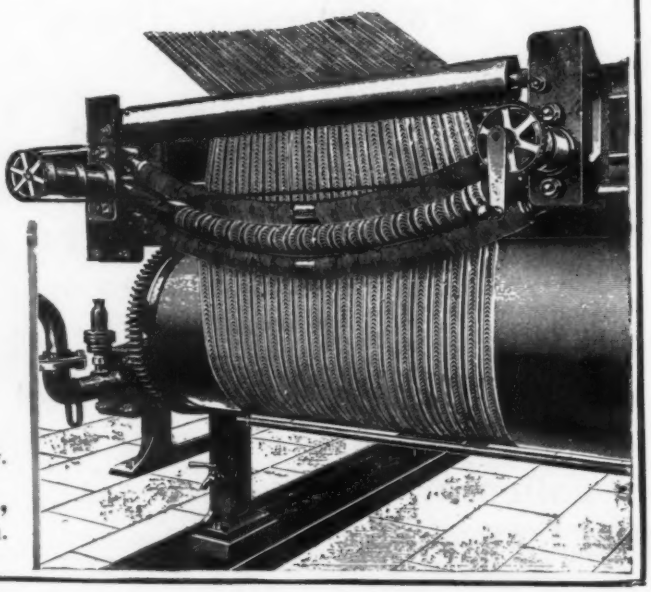
Perfectly Even Tension Both Ways

THIS ideal cloth expander gets the full width of the goods in a most satisfactory way. Can be attached to calenders or cans. Hundreds in use in Great Britain and on the Continent—hundreds more in the United States, with constant satisfaction.

Manufacturers unsolicited say to us, "You have the greatest thing in a spreader ever brought to our attention."

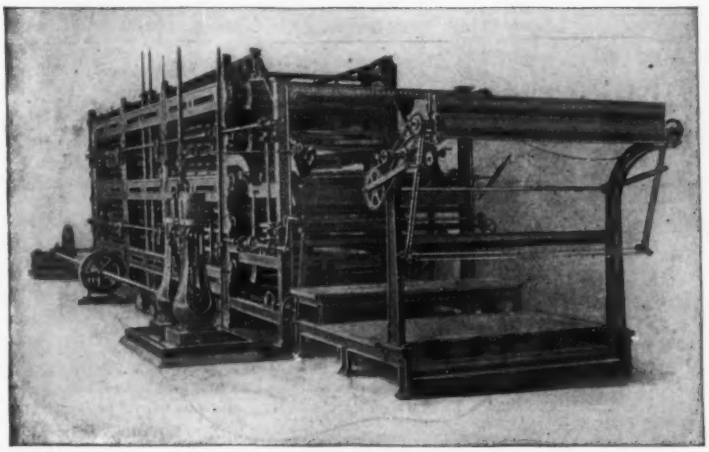
We put them in on trial.
Test it on your own work—'t will pay.

Thomas Leyland & Co.,
60 India St., - - - Boston.



TENTERING AND DRYING MACHINES

WITH LOW DOWN FEED. PATENTED FEBRUARY 26, 1895.



Tentering and Drying Machines on Pipe System. Special Dryers for Heavy Felt Goods. Hot Air Drying and Tentering Machines.

Fulling Mills, Washers, Chinchilla and Whitney Machines, Whipping Machines, Cone Willows, Marsden & Blamire Lap Feed, Dyeing Machines for Piece Goods, Soaping Machines, Wringing Machines, Jigs (Double or Single), Dewing Machines, etc. Crabbing Machines for worsted. Made either single, double or triple.

MANUFACTURED BY

D. R. KENYON & SON, Raritan, N. J. Successors to KENYON BROS.

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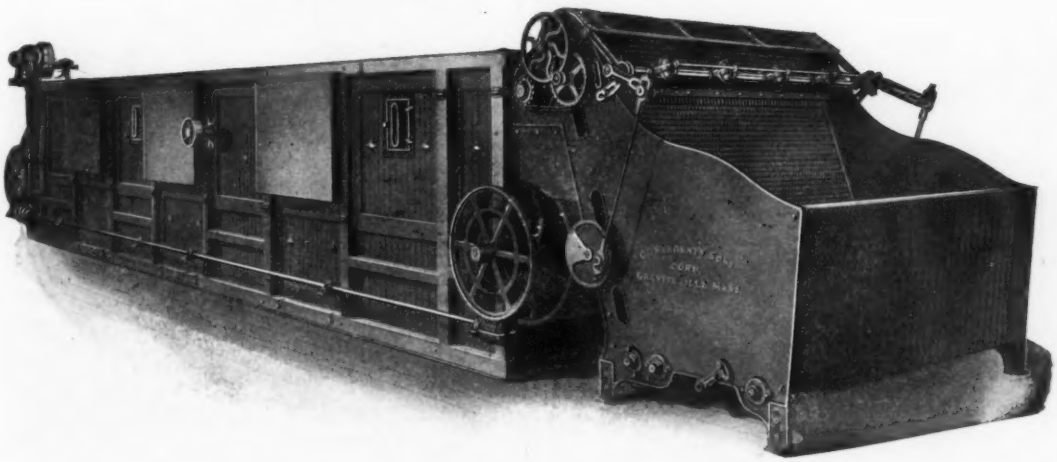
C. G. SARGENT'S SONS

CORPORATION

GRANITEVILLE, MASS.



BUILDERS OF

Stock Dryers, Wool Washers, Wool Dusters, Carbonizing Plants, Burr Pickers, Etc.

SPINDLES

EASTON AND BURNHAM MACHINE CO.

PAWTUCKET, R. I.

REPAIRS FOR RABBETH SPINDLES

Individual Drive

Electric motors, directly connected to individual textile machines, are in daily operation on the following machines:

Pickers	Calender Rolls
Drawing Frames	Core Winders
Fly Frames	Hydro Extractors
Spinning Frames	Printing Machines
Warpers	Starch Mangles
Looms	Skein Winders
Spoolers	Warp Drawing Machines
Winding Machines	Tenter Fames

Why?

Because of more uniform operation, resulting in higher speeds and consequently increased quantity as well as improved quality of product, to say nothing of the convenience.

Send for publication No. 22 "The Motor in the Mill" and for publication No. 13301, "Electric Drive in Textile Mills," each being a review of electric drive, group and individual, in modern textile mills.

Westinghouse Electric & Mfg. Co.

Atlanta Charlotte Philadelphia
Boston New York and other large cities

USE

Aqua Rawhide Belting

OIL-STEAMPROOF "Aqua" WATERPROOF

If steam or wet weather makes your belts stretch beyond all reason,
If your belts slip and ruin because oil or water drips upon them, or
If your rubber, duck or so-called "waterproof" oak-tanned belts have gone to pieces or won't keep your machines running regularly.

Write for sample.

SHULTZ BELTING COMPANY
St. Louis, Mo.

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WM. FIRTH, Pres. EDWIN BARNES, Vice-Pres. JOHN H. NELSON, Treas.

WILLIAM FIRTH CO.

Post Office Square Building 79 Milk Street, BOSTON, MASS.

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ASA LEES & CO., Limited,

TEXTILE MACHINERY,

OF EVERY DESCRIPTION FOR COTTON, WOOLEN AND WORSTED.

SOLE AGENTS FOR

JOSEPH STUBBS, Gassing, Winding and Reeling Machinery for Cotton, Worsted and Silk

GEO. HATTERSLEY & SONS, LTD. Makers of every Description of Looms, etc.

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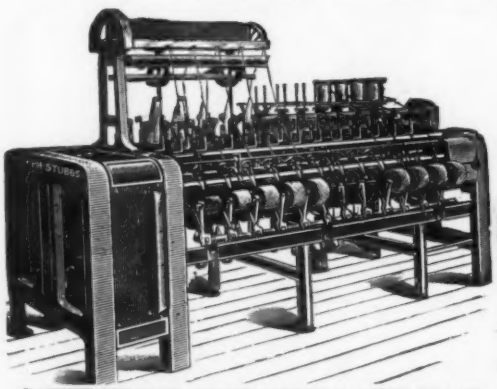
PICK GLASSES, LEATHER APRONS, PATENT WIRE CHAIN APRONS.

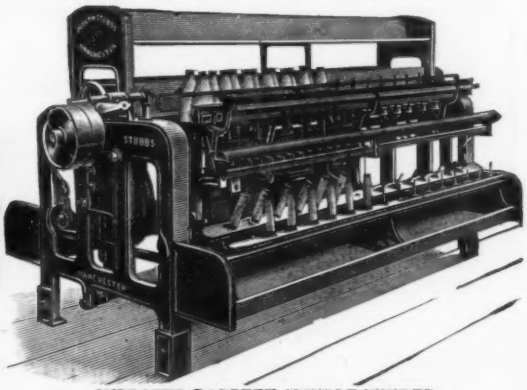
JOSEPH STUBBS - - Manchester, England.

SPECIAL MACHINERY

For Winding, Gassing, Reeling, Preparing, Polishing and Bundling Yarns.



PATENT QUICK TRAVERSE COTTON GASSING FRAME.



IMPROVED RABBETH SPINDLE WINDER.
With Patent Tapering Motion, for Single Flanged Bobbins.

Sole Agents for the United States and Canada.

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DOBBINS' ELECTRIC SOAP, ABSOLUTELY PURE AND UNIFORM.

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AMMONIATED POTASH SALTS FOR SCOURING.

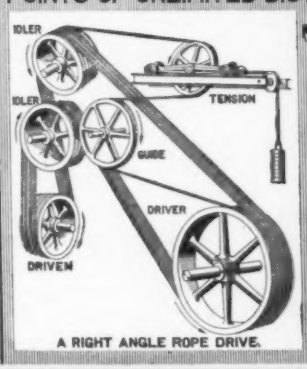
Dobbins' Palm Oil Fulling Soap. Dobbins' "Fast Black" Soap. Pure Olive Oil Potash Soaps.

FREE SAMPLE SENT FOR TRIAL ON REQUEST.

DOBBINS SOAP MANUFACTURING CO., 119 SOUTH FOURTH STREET, PHILADELPHIA, PENN.

BULLETIN ON ESSENTIALS OF ROPE DRIVING

FOR ECONOMICAL DISTRIBUTION OF POWER TO DIFFERENT POINTS OF UNLIMITED DISTANCES FROM THE SAME SOURCE



A RIGHT ANGLE ROPE DRIVE.

"ROPE DRIVING" IS THE METHOD.

LET US SUGGEST A DRIVE

GEO. V. CRESSON CO.
POWER TRANSMITTING MACHINERY
PHILADELPHIA AND NEW YORK

NOW READY FOR DISTRIBUTION. SEND FOR COPY

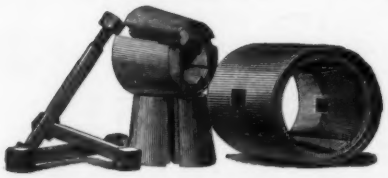
Softening hard water with soap is expensive and unsatisfactory.

Water frequently ranges from 10 to 20 degrees of hardness and each degree destroys approximately 1½ pounds of soap per 1000 gallons of water thus causing a loss of 15 to 30 pounds of the best hard soap before it begins to do the work for which it is intended.

A Bartlett Water Softener

produces soft water that is practically perfect for all textile purposes, preventing stains and streaks, saving time and labor in the finishing processes and greatly improving the finish. Send particulars regarding your requirements and we will send you full information regarding an installation that will meet your needs.

Northern Water Softener Company
Manufacturers **Madison, Wis.**



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DOUBLE CONE VISE COUPLING

has a way of holding shafts together, that no other COUPLING can equal.

WILLIAM SELLERS & CO., INCORPD.

PHILADELPHIA, PA.

Makers of

SHAFTS,
COUPLINGS,
PULLEYS,
HANGERS,

and all most approved appliances for the

Transmission of Power.

SEND FOR CATALOGUE AND PRICE LIST.

MACHINE TOOLS.
INJECTORS. POWER CRANES.

Patented in the United States and Foreign Countries.

The American

WROUGHT STEEL

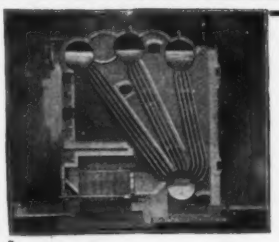
PULLEY

Is a parting PULLEY and can be applied without stripping the shaft.
It is Light, STRONG, and lasts a lifetime.
It clamps to the shaft perfectly—keys and set-screws superfluous.
Interchangeable metal Bushings to fit shafts of different sizes.
Particularly adapted to TEXTILE manufacturing.
Sold by the Leading Supply Houses all over the WORLD.

Send for Booklet.

The American Pulley Company

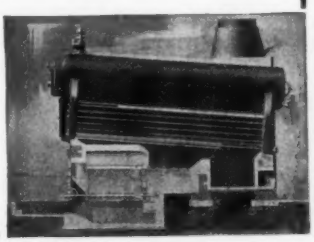
29th and Bristol Sts., Philadelphia, Pa.



The Murphy Automatic Smokeless Furnace

Burns Slack with Great Economy

The Murphy can be installed under any type of fire-tube or water-tube boiler and to units of any size.



SETTING UNDER TWO TYPES OF BOILERS SHOWN HEREWITH

MURPHY IRON WORKS

DETROIT, MICH.

WILSON & CO., BARNSLEY, Limited

BARNSLEY, ENGLAND.

Absolutely secure combination of Shield and Bobbin guaranteed.

Loose Shields Impossible.

Specialties: PATENT "LOCKFAST" and "CLIMAX" Shields. ENAMELLED CONDITIONING BOBBINS, Impervious to Steam, Moisture or Oil.

TRADE MARK.

GOLD MEDAL St. Louis, 1904. DIPLOMA d'Honneur Liege, 1905. Highest Awards for Bobbins.

Added Strength and Absolute Security.

Samples and Prices on Application.

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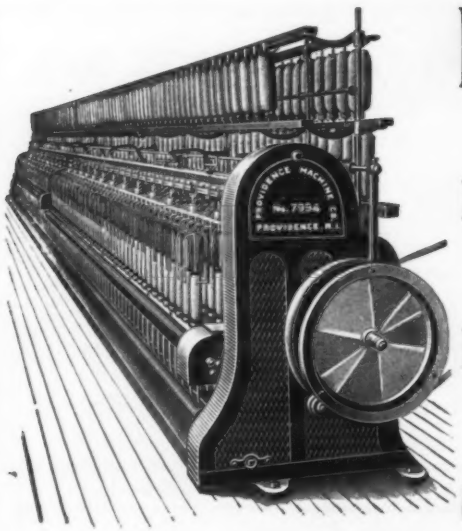

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Manufacturers of

Improved Cotton Roving Frames

Improved Worsted Roving Frames

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Crabbing, Steam Finishing, Opening and Folding, Tacking, Sewing, Squeezing Machines

BIRCH BROTHERS, SOMERVILLE, MASS.

ALBERT BIRCH, TEXTILE MECHANICIAN

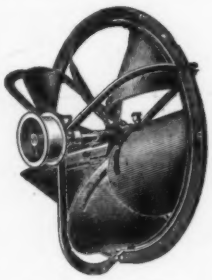
Bleaching and Napping Machinery

Bring in the balmy air of June with a Berry Wheel

then note the increased interest your operatives will take in their work. Pure air and profit are closely allied in the textile industry. The cost of a Berry Wheel is small compared to the results attained.

Very efficient and economical for drying.

This is our Berry Wheel, the most effective agent for moving air, eliminating steam and other impurities in the atmosphere.



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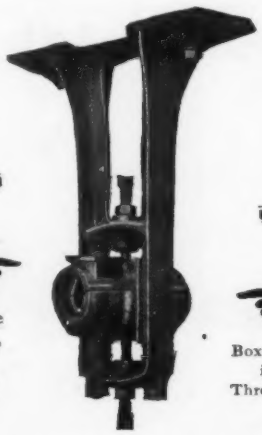

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Box Built in Three Parts.

AN IDEAL HANGER BOX

Strongly Built and Designed for Howard Grease The Perfect Lubricant

NO DRIP

SAVES POWER TIME MONEY

NO WASTE

We carry a complete line of these Hanger Boxes as well as a full stock of Shafting, Collars, Couplings, Pulleys, etc.

We are also prepared to figure upon complete equipment of power transmitting machinery.

Our Booklet No. 12 is "worth while" the asking.

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Trade Mark

OLNEY & WARRIN
66-68 Centre St.
New York

DINSMORE

Mill Sewing Machines

No. 9.—Portable Foot-Power Rotary Sewing Machine

It is especially adapted for use in Cotton and Woolen Mills, Bleacheries, Print Works at the Printing Machines, in Dye Works, Cloth Rooms, at the Fulling Mill, Shears, Calendars, Gigs, Drying Machines, etc., or any of the different finishing processes in textile mills.

Manufactured by the

DINSMORE MANUFACTURING CO.,

Salem, Mass., U. S. A.

Unsurpassed as Wool Softeners

"BRETON" OILS FOR WOOL

BRETON OIL FOR WOOL TRADE MARK

We have the same customers on our books for these oils for over a quarter of a century. Order trial barrel subject to test and approval.

BORNE, SCRYMSER & COMPANY,
80 South St., New York.
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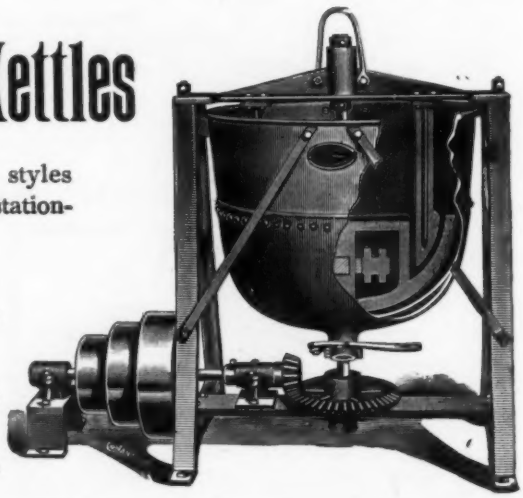
Established 1841.

Steam Jacket Mixing Kettles



This cut represents one of our many styles of steam mixing kettles, made with stationary and removable stirrers.

E. B. BADGER & SONS CO.,
COPPERSMITHS,
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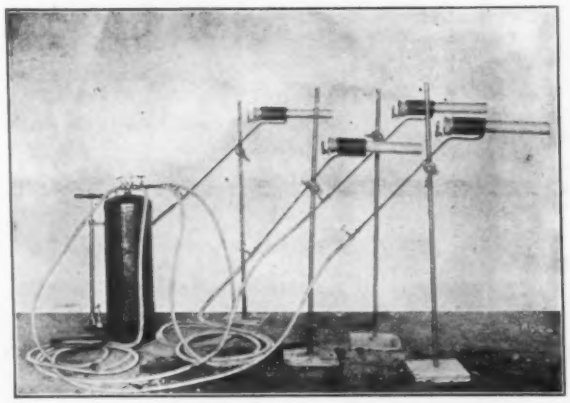
Badger Fire Extinguisher.



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Portable Brazing Plants For Sale.

Write for particulars.

The American Ferrofix Brazing Company
1515 Sansom St., Philadelphia.
Southern Agents, Riddell Bros., Atlanta, Ga.

WILLIAM FIRTH, Pres. THE FRANK B. COMINS, Vice-Pres. and Treas.

AMERICAN MOISTENING COMPANY

79 Milk Street, Boston, Mass.

Received the HIGHEST AWARD on recommendation of the FRANKLIN INSTITUTE for

"Simplicity and Originality of Design."

Is the largest manufacturer of HUMIDIFIERS in the World. The last twenty years receiving the HIGHEST AWARD in this country and Europe for its AIR-MOISTENING SYSTEM. EIGHT GOLD MEDALS and others.

The Only Perfect System of Air Moistening

Has Been Adopted by the Representative Manufacturers of this Country.
The only System adopted in the Textile Schools. Write for booklet "T" on Humidification.
Legal proceedings will at once be taken against infringers and users of infringements.

J. S. COTHRAN, Southern Representative, Trust Bldg., **CHARLOTTE, N. C.**

WILLIAM BODDEN & SON, Limited

The "BODDEN" Flyer

For QUALITY OF FINISH
For QUANTITY of PRODUCTION
HAS STOOD THE TEST OF YEARS

Sole Agents for U. S. A.

Thomas Mayor & Son, Olney Street, **Providence, R. I.**

Ordinarily when a belt has been spliced a couple of times, it isn't worth much. Goes over the pulleys "Bumpty bump;" slips, strains the bearings, jars the machines, and the sooner it's thrown away the better.

A Jackson Belt Lacer

in your shop will change all this.
It laces a 5" belt in three minutes at a cost for material of less than one cent. The joint is the neatest and most compact ever known.
It will stand 3800 pounds tension, and passes over the smallest pulley without slipping, pounding or strain.

Send for our catalog.

Birdsboro Steel Foundry & Mch. Co.
Birdsboro, Pa.

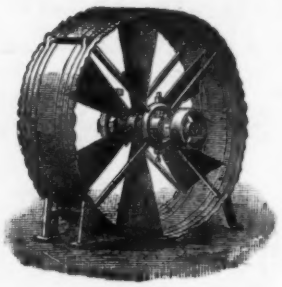
Hydro-Extractors, Exhaust Fans, Dye Tanks and Tubs

Adjusts itself to an uneven load, runs without vibration
Unusual capacity for high-class work

Bridger Hydraulic Cutting Press

Send for Catalog

Tolhurst Machine Works
Fulton St., and 6th Ave., Troy, N. Y.



Moves more air than any other fan made. Very efficient under widely varying conditions. Noiseless and does not obstruct the light

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SALEM, MASS.

ELEVATORS

ESPECIALLY ADAPTED FOR MILL USE.

SEND FOR ILLUSTRATED CATALOGUE AND ESTIMATE.

An exclusive feature of Lane Baskets

The upright U shape supporting frames in a Lane Canvas Basket extend from the bottom upward THROUGH CANVAS POCKETS.

This complete enclosure of the frame members materially increases the strength and rigidity of the Basket and keeps the Canvas always in its proper position on the frame.

Sold direct or through principal Supply Houses.

See our Descriptive Catalog and Price List No. 37.

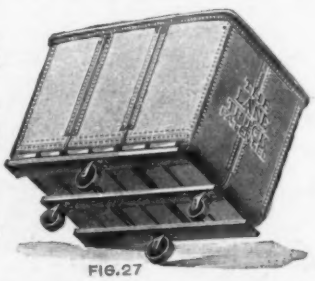


FIG. 27

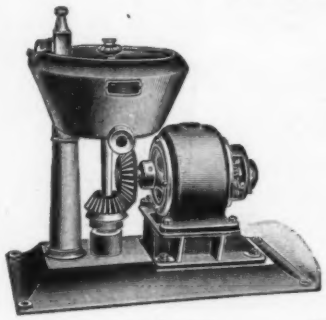
MANUFACTURED ONLY BY

W. T. Lane & Brother, Office & Works **Poughkeepsie, N. Y.**

ELECTRICALLY DRIVEN

CENTRIFUGAL

Oil Separator



MOTOR WOUND FOR ANY VOLTAGE.

Separates oil from bolts, nuts, and scraps of all kind—oil that would otherwise be wasted, and makes it as good as it ever was, for further use. **Send for Catalogue.**

MANUFACTURED BY THE

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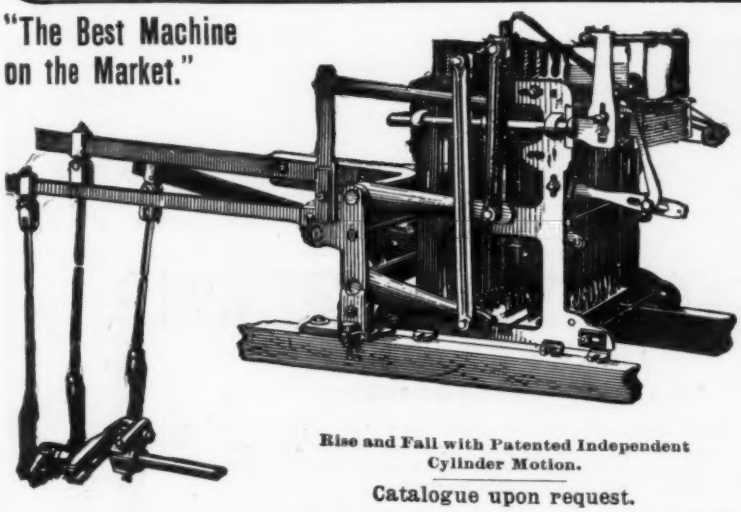
109 Beach Street, Boston, Mass.

Incorporated 1864. Founded 1845.

"The Best Machine on the Market."



Rise and Fall with Patented Independent Cylinder Motion.

Catalogue upon request.

USE THE

HALTON JACQUARD

Original Fine Index Machines

Single Lift, Double Lift, Double Cylinder, Rise and Fall, Crossborder,

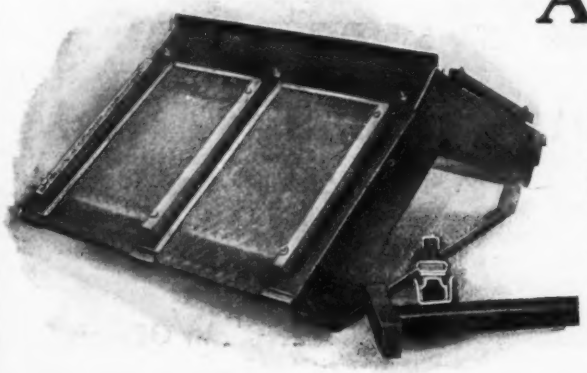
THOMAS HALTON'S SONS,

Allegheny Avenue and C Street,

PHILADELPHIA

Representative
H. A. Forbes, Paterson, N. J.

Anti-Pluvius Skylights



are easily erected and kept clean. Cost less to maintain than ordinary forms of construction. Anyone can erect. No putty or cement required. Felt rest for glass. Bridge for walking on.

Prices are reasonable.

Write today for all the facts about Anti-Pluvius Skylights.

The G. DROUVE CO.,

Bridgeport, Conn.

Western Office, 40 Dearborn St., Chicago.

Manufacture also

The Lovell Window Operator

Established 1870

John Heathcote & Son

Providence, R. I.

Builders of Improved

Cloth Tentering and Drying Machinery

for WOOLENS, WORSTEDS, FELTS, etc.

Built Upright or Horizontal with Low Down Feed

Ventilating Fans a Specialty

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31 F.S.

Buffalo Fans

The Buffalo Fan System affords an unsurpassed means of regulating the temperature, humidity and volume of air, each independent of the other, so that any desired result may be obtained. The Buffalo Fan System presents an ideal method of drying. Gives the most rapid action. Removes the moisture at the lowest temperatures. Is easiest to control. Secures the highest economy. Cost of installation moderate.

Catalogue F. T. W.

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Buffalo New York Chicago

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INSPECTION

Means Your Protection

No more critical inspection can be made than the inspection which every one of our leather loop pickers receives when finished. All pickers which are soft and spongy are thrown out so that you receive only pickers made of firm and durable leather.

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SACO, MAINE

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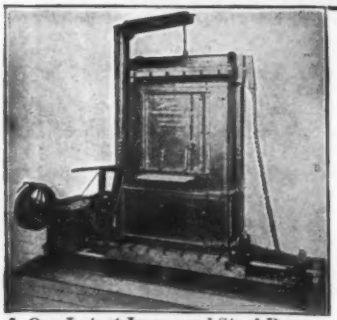
LOOM HARNESSES
LUG STRAPS
PICKER LOOPS



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Minnich Baling Press

for all kinds of products.

Must turn out more bales with less labor and power than any press in the market.

Send for circular.

Minnich Machine Works,

Lancaster Co. Landisville, Pa.

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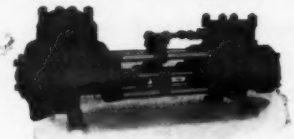
INDIANAPOLIS, IND.

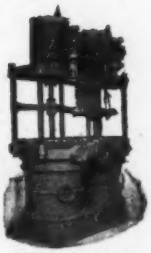
DUPLEX PUMPS, SIMPLE PUMPS
ATLANTIC BOILER FEEDERS
JET AND SURFACE **CONDENSERS** ELECTRIC PUMPS BELTED PUMPS, Etc.

VERTICAL AIR PUMP AND JET CONDENSER



DUPLEX DURABLE PUMP

SIMPLE PUMP



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We have the Largest Exclusive Spool Manufacturing Plant in the World with a capacity of 10,000 High Grade Bushed Spools per day.

Our splendid facilities guarantee prompt and immediate deliveries. Our equipment, than which no better exists, guarantees the highest grade of all hard wood spools of the highest quality procurable at medium prices.

COTTON WARPER SPOOLS, COTTON TWISTER SPOOLS,
WORSTED ROVE SPOOLS, CARPET CREEL SPOOLS,
WORSTED REDUCER SPOOLS,
WOOL WARP SPOOLS.

We can give one week deliveries on any order of the above kinds of spools.

Lestershire Spool & Manufacturing Co.,
LESTERSHIRE, N. Y.

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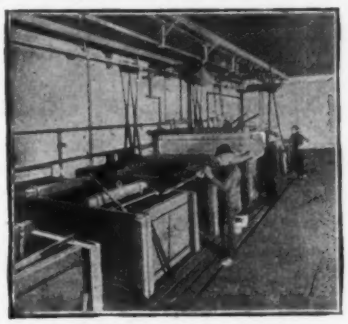
This cut shows a new and useful machine patented by D. F. Waters for the dyeing of any color on Worsted, Woolen, Cotton and Merino Yarns.



Being successfully operated by some of the largest manufacturers in the country.
The saving of labor will more than pay for a machine in a few months.
Capacity; 2,000 lbs. a day per man.
Machine can be seen in operation at any time at my plant where I have 13 in operation all the time.

D. F. WATERS,
54 and 55 Wister St., GERMANTOWN,
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PREVENT ROT AND DECAY

FLOORS, SILLS, JOISTS, TRESTLES, DYE TANKS, VATS
or other Woodwork can be successfully preserved
by applying Avenarius Carbolineum, the
great German Wood Preservative.

Applied with brush or by dipping Always ready for use. On the market since 1875.
TELL US WHERE YOU ARE HAVING TROUBLE AND WE WILL MAKE A RECOMMENDATION.

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Don't Disfigure Your Goods with an inferior method of stamping your name and trademark. Kaumagraph stamps give a clear and clean impression and at no appreciable advance in price over other methods. Send for our samples; free on request.

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15 to 200 H. P.

We are thoroughly familiar with the electric requirements of textile mills.

This is one reason why **C-W** induction motors make good in this field.

Crocker-Wheeler Company, Ampere, N. J.

To the Manufacturer who Invites Success!

THE HENDERSON CARD

will increase your carding and improve the quality of your yarn with less waste, greater strength and increased production over any other system.

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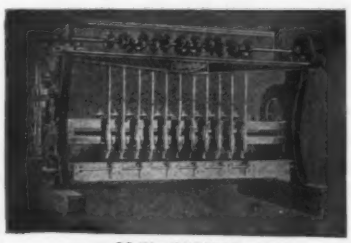
Successors to the Cleveland Machine Works

Owners and manufacturers of the celebrated **Henderson Card** for Wool, Worsted, Cotton, Waste, Flax and Asbestos. Also manufacturers of

All Kinds of Woolen Machinery.



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L. F. FALES

MANUFACTURER AND BUILDER OF

SEWING MACHINES

FOR ALL PURPOSES WHERE A NUMBER OF ROWS OF SEAMS ARE REQUIRED

BUILT WITH ANY REQUIRED NUMBER OF NEEDLES

DESIGNER OF SPECIAL MACHINERY

WALPOLE, MASS. U. S. A.

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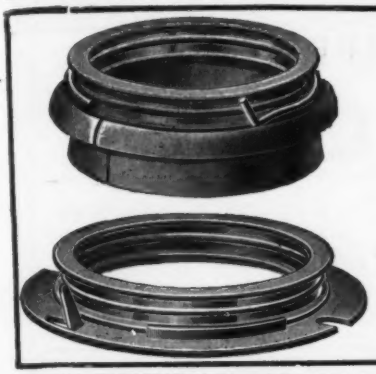

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TWISTER RINGS.
RING HOLDERS.
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WHITINSVILLE SPINNING RING CO.,
WHITINSVILLE, MASS., U. S. A.

"No Waste"

THE ONLY
Seamless Hard Fibre Roving Can.

The highest type of Roving Can ever produced.

Made from Pure Chemical Hard Fibre, without **seams** or **rivets**, absolutely smooth, and of incomparable durability.

Supplied with our Seamless Protection or Kicking Band, with either an electrically welded steel top ring, or a smooth turned fibre top, and with either a wooden or metal bottom secured with a seamless steel bottom ring.

Thousands of these **"No Waste"** Cans now in use and endorsed by the leading and most representative mills in the United States and Canada.

WE ALSO MAKE A HIGH GRADE OF

Cordage Cans	Comber Boxes
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Write for prices.

STANDARD FIBRE CO.
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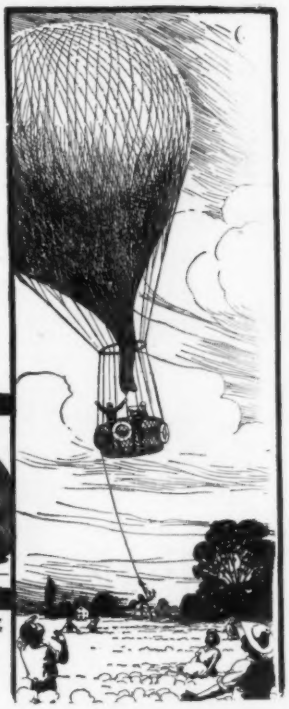
If you are using rope for baling you are helping to pay the gas bill to keep rope prices balloon high.

Rope is up—*Trojan Bale Tie* and *Band* is down.

Trojan Band is made plain or galvanized in coils from 2000 to 3000 feet without a break. Widths ½, ⅝, ¾ and 1 inch.

With the present high prices of rope Trojan Band and Buckle is a **money saver.**



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304 PEARL ST., PROVIDENCE, R. I.

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ALL STYLES AND KINDS FOR FLAT AND ROUND BRAIDS.

SOLID SASH AND CURTAIN CORDS,

SHOE AND CORSET LACES, BANDING

AND ALL BRAIDED FABRICS.

HYDRAULIC PRESSED

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SEND FOR PRICE LIST

CRANE BROS., Westfield, Mass

Manufacturers of Linenoid Seamless Goods.

NEW AND SECOND-HAND

WOOLEN

Machinery

GEO. L. SCHOFIELD, 123 No. Front St., PHILA., PA.

Agent for the Weston Hydro Extractor.

The Proper Care of Belts.

This is the title of a little booklet telling how to preserve all belts and prevent slipping. Write for free copy and mention this paper.

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Day and Evening Instruction in

Picking, Carding, Combing, Spinning, Warp Preparation, Weaving, Designing, Knitting, Chemistry and Dyeing.

CATALOGUE ON APPLICATION.

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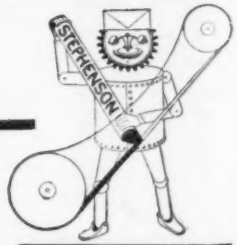

Took us years to learn that a Pound STICK of

Stephenson

Bar Belt Dressing

1⅞ inches in diameter is the size that best suits most men. It has just the right "feel" to it in your hands. ¶ Clean to handle; easy to apply (friction on the belt heats it,) always to be relied upon where a belt slips. STEPHENSON Dressing reflects credit on the maker, the seller and the user. Quality dressing for Quality folks. ¶ Your hardware store will sell you as little as a box of a dozen pound sticks, or give you a free sample to test.

In either case look for the Cog Wheel Face.

Red Label for Leather Belts. No ONE kind is good for ALL belts— You know that. Green Label for Rubber or Canvas.

T. C. ENTWISTLE COMPANY

LOWELL, MASS.

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PATENT EXPANSION COMBS

Southern Agent, STUART W. CRAMER, Charlotte, N. C.

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Somerville, Mass.

"Coronation"

Piece End Sewing Machines

on English stand sent on trial most anywhere.

Send for Circular.

Bleaching, Dyeing & Finishing Machinery.

BIRCH TREE.

Sews any Fabric

Thick or Thin

Wet or Dry

Without Change

Fine Stitch or Coarse Stitch

The Metallic Drawing Roll Co.

INDIAN ORCHARD, MASS.

MANUFACTURERS OF

Metallic Rolls

Especially adapted for Cotton Mills. 25 to 33 per cent more Production Guaranteed. Weight Reduced 33 to 50 per cent. No Leather Covering Bill.

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WOOL BURRING and PICKING MACHINERY
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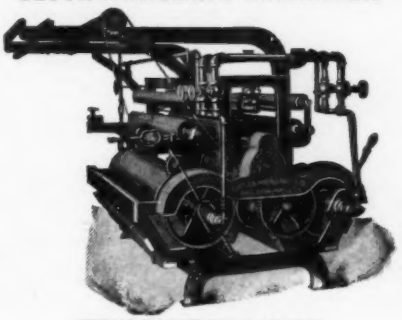

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WORCESTER, MASS.

Hill's Improved Tin Roving Cans

are especially adapted for use in Woolen Mills, IXXX Tin Plate body, side seam locked and grooved—made by machinery—every can alike. Special pattern top and bottom rings made of ¾ inch iron welded at joints and tinned. A wide "kicking band" beaded and soldered on the body. We can't tell all their good points here. Let us send full details.

Write for prices.

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OF ALL KINDS

For Laying Line, Twine and Cord of all sizes.

Nichols' Patent Whirligig Twister for Hard Laid Twine.

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Warp Yarn Twisters, Sail Twine Twisters.

Prices and particulars on application.

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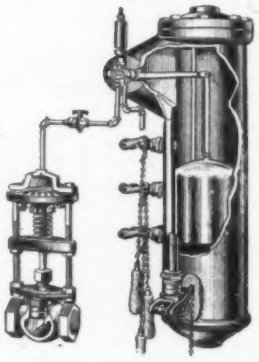
Berry

Safety Automatic Feed Water

Regulator



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The E. E. Burnham Co.

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Manufacturers of

Leather Belting
Cotton and Worsted Roll Coverers

General Mill Supplies

85% Pure Magnesia Steam Pipe and Boiler Covering

1866 1908

HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO. HARTFORD, CONN.

41st Annual Statement

January 1, 1908

Capital, $1,000,000.00
Surplus, 1,006,868.06
Reserves, 2,053,326.74
Assets, 4,060,194.80

The HARTFORD was the Pioneer Company in the field of Steam Boiler Insurance, and it is the only company which makes a specialty of and does exclusively a steam boiler inspection and insurance business.

The HARTFORD is the only company whose entire talent and energies are applied to the study of steam, to the scientific construction and installation of boilers, and to their periodical inspection by expert mechanics.

The HARTFORD is the only company whose entire assets and resources are held exclusively for the protection of steam users, and the payment of losses occasioned by the explosion of steam boilers and for no other hazard whatsoever.

The HARTFORD is now doing nearly nine-tenth of the Inspection and Insurance of Steam Boilers in the New England States, and nearly two-thirds of the entire amount done throughout the United States.

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Hartford, Conn.

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THE BEST FIRE HOSE MADE.

(Trade Mark.)

For use in

Cotton Mills, Woolen Mills and Factories.

Seamless Woven and Rubber lined EUREKA COTTON HOSE, has no equal. Send for circular and testimonials.

Awarded Gold Medal at the St. Louis Exposition, 1904.

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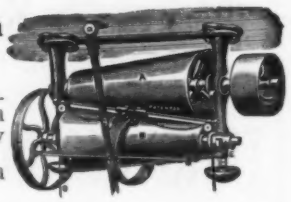
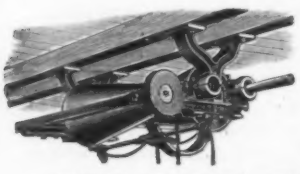
Variable Speed Countershafts

The Evans Friction Cone Pulleys



will drive your machines at any desired speed from 1 to 6 by simply pulling a cord.

They are guaranteed to do your work.



We'll furnish them for either floor or hanging use.

Over Ten Thousand Sets in Operation in this Country and Europe.

Send for Catalogue.

EVANS FRICTION CONE COMPANY

G. Frank Evans. - Newton Center, Mass.

Ament's **IRON GLUE**

for covering Worsted and Cotton Mill Rolls, Pulleys, Etc. Holds the covering until it is entirely worn out. Saves eight times its cost in leather alone. Write for sample demonstration.

Manufactured and Sold by

H. B. AMENT, 626 Camp St., Louisville, Ky.

SILK MILL SUPPLIES

OF EVERY KIND AND DESCRIPTION

Also Power Transmission Supplies for General Mill Use.

I. A. HALL & CO.
Paterson, N. J.

Allentown Reed, Harness and Mill Supply Co., Allentown, Pa.

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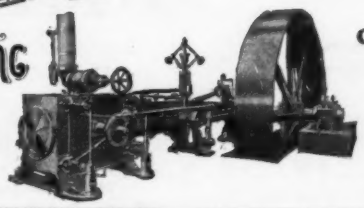
Successor to Ward & Vandegrift

In the Manufacturing of **SPINDLES,**

For Cotton, Woolen, Worsted, Silk and Flax Machinery. Manufacturers and Repairers. Also Flyers, Steel Caps, Bolsters, Steps, Tubes, Etc.

ELMER, SALEM CO., .. N. J.

THE IMPROVED FISHKILL CORLISS ENGINE
BUILT BY THE FISHKILL LANDING MACHINE CO.,
FISHKILL ON HUDSON N.Y.



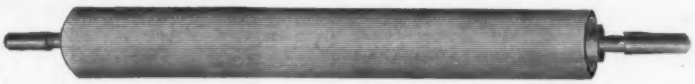
For all power purposes
where high economy and
close regulation is required.

Cylinders & Valve Chests rebored in place.

General engine repairs.

Rubber Covered Rolls for all Mechanical Purposes
Special Densities for each purpose giving results not obtainable elsewhere.

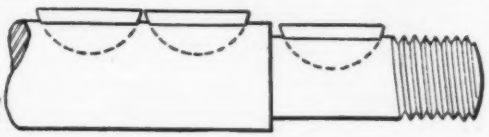
Rubber Covered Slasher Rolls



Also Power Wringers of all sizes and descriptions.

Old Rolls Recovered. New Rolls Complete.
The American Wringer Co.. 99 Chambers Street, New York City.
Factory, Woonsocket, R. I.

Key Seating Attachment
FOR
Whiton Gear Cutter

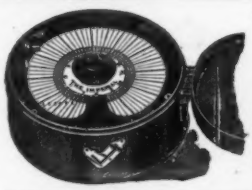


We offer an attachment for use with our Gear Cutting Machine, to cut key seats for the Woodruff System of Keying. Write for description, circulars and price.

THE D. E. WHITON MACHINE CO.,
19 Oak Street, New London, Conn.

REVOLVING FLAT CARD BRUSHES

S. A. Felton & Son Co. FOR USE ON ALL MAKES OF REVOLVING FLAT CARDS Manchester, N.H.



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The New Imperial Watchman's Clock
Compels your watchman to do his duty. This clock will reduce your insurance rate. No complicated mechanism. Absolutely reliable. Full particulars.
T. NANZ CLOCK CO., - - 178 Fulton Street, New York.

Steel and Brass MAILS
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Reeds, Harnesses, Lingoes, Shuttles and Quills.

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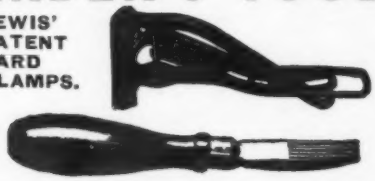
LEWIS' PATENT CARD CLAMPS.



Gardner & Reid's Card Tooth Raiser

For setting up Bent Teeth of Card Clothing. Also a variety of other tools used by Carders and Manufacturers. Send for circular.

WM. H. BROWN CO. No. 81 Mechanic Street WORCESTER, MASS.

R. H. HOOD

1842-44-46 GERMANTOWN AVENUE, PHILADELPHIA, PA.

Successor to THOMAS RAMSDEN,

Maker of

Worsted Machinery

For Preparing, Finishing Gills and Drawing Boxes

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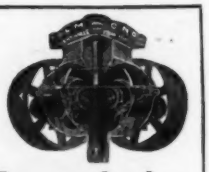

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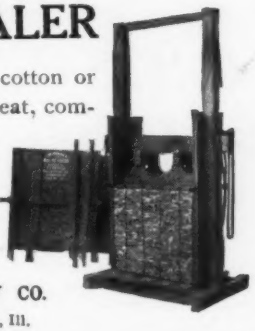
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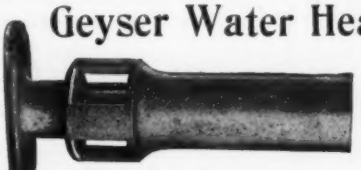
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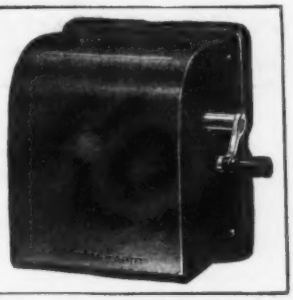

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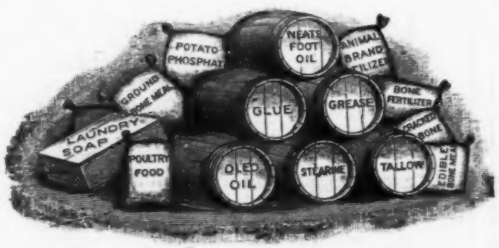

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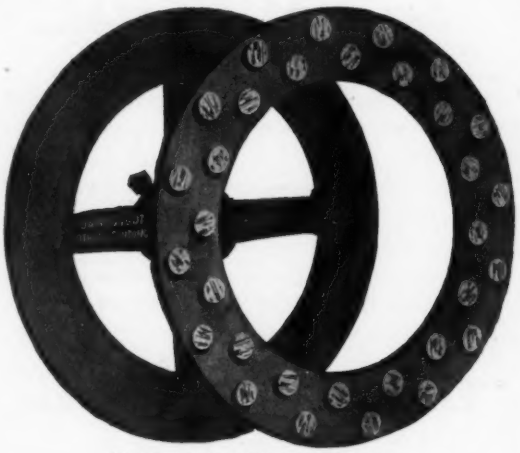

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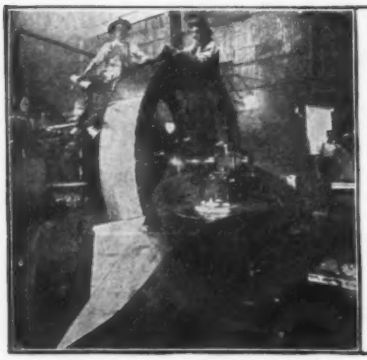

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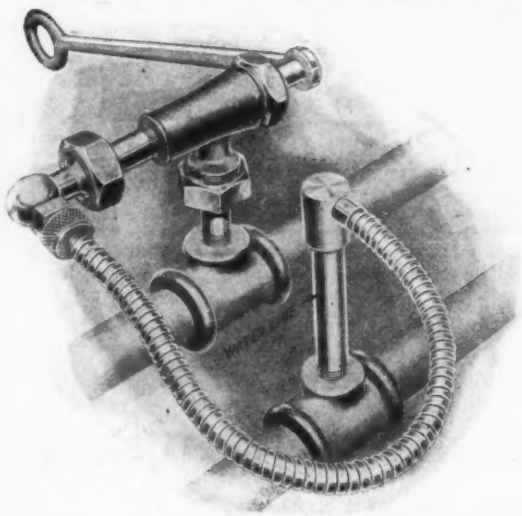

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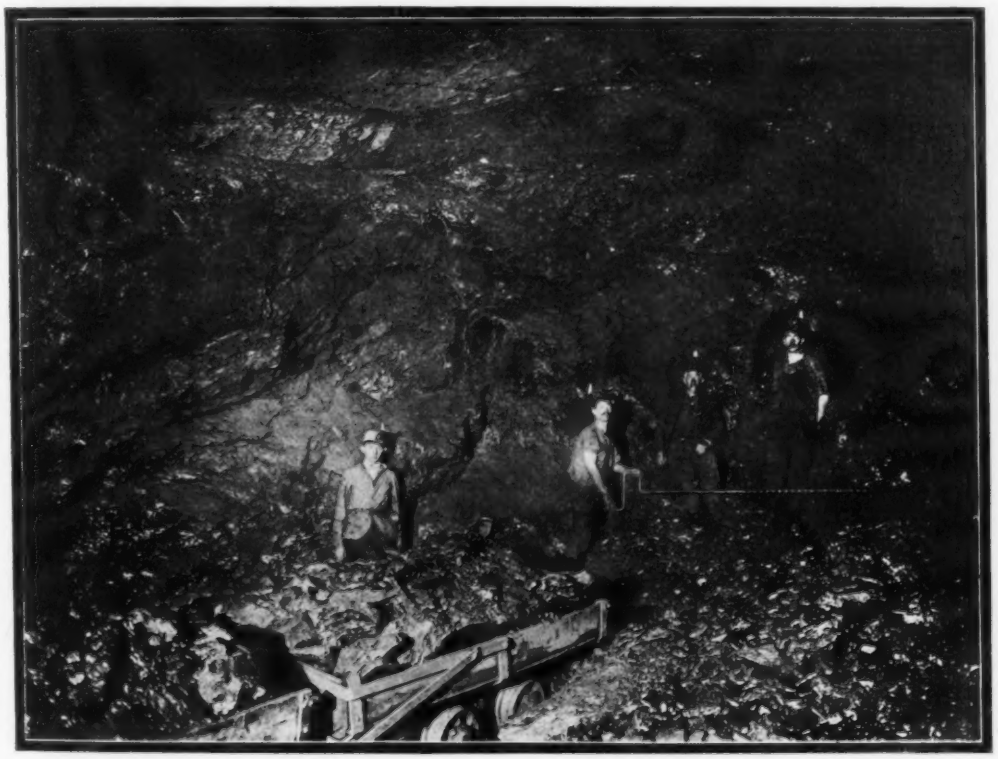

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Table of Contents for June.

	PAGE
Monthly Comment	65
A National Wool Conference	71
Artificial Silk	72
Wool Exchanges	73
The False Packing of Wool	74
Seasonable Fabrics	79
Washington Notes	81
Cotton Manufacturers' Convention at Richmond	83
Woolen and Worsted Convention	102
The Market Value of Textile Machinery	106
Plan of Linen Weaving Mill	108
The Use of Conditioning Worsted	110
Hosiery and Underwear Convention	112
Knit Goods Manufacturers' Convention	123
CORRESPONDENCE AND NOTES	124
Bagging for Cotton Bales—The Dressing Room—The Economics of Short Time—English Notes—The Goldsbrough, Mort Process of Wool Packing.	
QUESTIONS AND ANSWERS	140
KNITTING DEPARTMENT.	144
A Knitting Mill With or Without a Spinning Plant—A Take-up for Circular Knitting Machines—A Needle Protector—A Knitting Machine for Ribbed Goods—Knit Goods Finishing Machine—A Knitting Machine for Pile Effects—Mill News.	
NEW MACHINERY AND PROCESSES	156
DYEING, BLEACHING, PRINTING, ETC.	168
Sulphur Dyes on Half Wool—Hosiery Figure Dyeing Machines—The New Dyehouse at the Washington Mills—Dye Recipes.	
MILL NEWS	176
PERSONALS.	183
NEW PUBLICATIONS	189
INDUSTRIAL NOTES	190
RECENT TEXTILE PATENTS.	198
TEXTILE TRADE MARKS REGISTERED	199
WOOL MARKET	225
COTTON MARKET	227
YARN MARKET	229
RAG AND SHODDY MARKET	238
DYESTUFFS AND CHEMICALS	240

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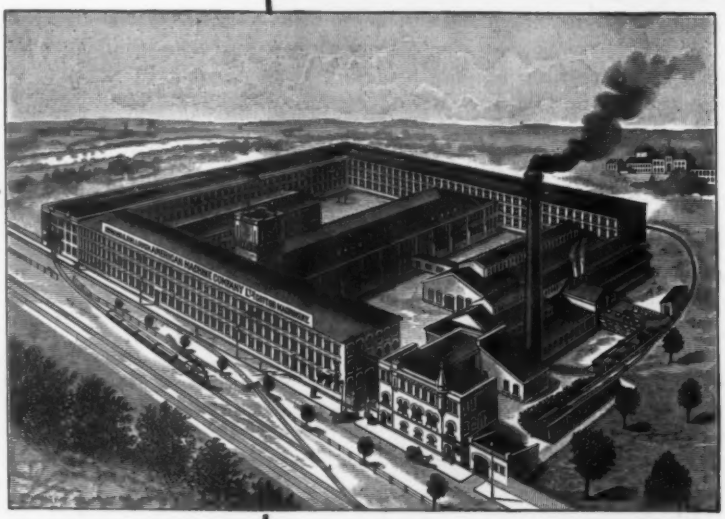

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COMBINING

The Textile World and Textile Record.

VOL. 35 (NEW SERIES.) June, 1908 No. 3

Monthly Comment.

Information Wanted.

On the day before the capture of that citadel of free trade, North-west Manchester, by Joynson-Hicks, and the flight of the freetrade commander to a mountain fastness in Forfar, the "Manchester (Eng.) Guardian" closed a comment on our April editorial "Wider Markets for American Textile Mills," with the following:

> In despair of competing in the foreign markets, it is proposed that this great home market (the United States) should be self-contained, and in the interests of its manufacturers the tariff raised against such textiles as are now imported. "It is the American policy and needs no apology." Here the writer, as is usual with Protectionists, conveniently leaves the subject. He omits to consider the effect of greater protection for textiles, which can only mean an increase of price and to that extent an increase in the cost of living and in the cost of production. But the interesting point in the argument for Lancashire is that Protection with the American writer involves a confession of failure in the export trade. When Lancashire dares to make such a confession and to abandon the foreign export trade as lost, Protection might become at any rate a plausible device of keeping a declining industry alive, but by that time Lancashire would have ceased to be itself and have degenerated into a third-rate country.

We had to stop somewhere in the April discussion of the tariff question and choose the end of the fourth page where it seemed as if a good reason, high wages, for our lack of success in competing with foreign countries in the sale of cotton goods had been made reasonably clear. Our omission to discuss the point raised by the "Guardian" was a matter not of convenience in an argument on the tariff, but of necessity in the make-up of the magazine.

But what is to be said of the "Guardian's" failure to mention in its comment on our article, the higher wages that we assigned as a cause for our failure to compete with foreign mills? Was it convenient to keep the idea of higher wages from the minds of Manchester voters as they were about to choose between the protection of W. Joynson-Hicks and the free trade of Winston Churchill? Such omissions may have their uses in special pleading, whose only object is to convince. They are, however, but obstacles in the search for the truth, which can be reached only by a mind ready to accept facts regardless of the opinions they may show to be wrong or the conclusions to which they may lead. In this spirit we will try to consider the effect of greater protection on prices, cost of living and cost of production.

The United States is buying textile goods from foreign countries at the rate of $313,000,000 a year, the manufacture of which would give employment to nearly 200,000 mill operatives. At the same time there are many thousands of mill operatives idle in

this country. These operatives are able to manufacture goods to take the place of the imported textiles, as economically as the imported products are made abroad. By economy we refer here to the expenditure of labor and material, and not to the apparent cost as indicated by the expenditure of money. It seems to us that the wealth of the United States would be increased and the welfare of the people promoted by giving these idle operatives employment in the manufacture of goods to take the place of those now imported. At the present time we have the goods, foreign countries have the money and our mill operatives are idle. By making the goods at home we would have both the goods and the money, and our people would be employed.

Why, it may be asked, are not the goods made in our own mills now? For several reasons. There is here, as in all countries, the preference for imported goods because they are imported under the mistaken notion that imported goods are necessarily better than those of domestic manufacture. This accounts for a considerable part of the demand for foreign goods which could be supplied as well by American mills. The chief reason, however, is found in the lower apparent cost of production in foreign mills, resulting from the lower wages, which in turn are the result of the difference in the density of population between the United States and foreign countries.

According to the latest available statistics the United States has a population of 21 to the square mile; Saxony, 743; Lancashire, 1070. This unequal distribution of population is neither natural nor beneficial. It persists because of the inertia of population. Freedom of trade tends to perpetuate it. Protection, by obstructing the transportation of the products of labor from densely populated sections to countries with a more scattered population tends to remove the inequality.

The cost of production is real or apparent, that is, measured either by the actual expenditure of labor and material or by the expenditure of money. The real cost of a yard of cotton cloth may be the same at Burnley as at Lowell, while the apparent cost is much lower at Burnley because the dense population of Lancashire has forced the money equivalent of labor far below the American level.

The apparent cost of hosiery as measured by the expenditure of money, the standard of trade, may be much lower in Saxony than in Reading, Pa.; while the real cost measured by labor and material and by human flesh and blood may be far higher in the German kingdom, as is indicated by this extract from a recent report on German industrial conditions:

> The infantile death rate in Saxony probably leads the world. In places like Chemnitz the mortality is appalling. Of the total number of children born, over one-third die under 1 year of age. This is due to the unsanitary conditions of crowded tenements, to lack of sufficient nourishment, sometimes to lack of medical attention, and to lack of sufficient care by their mothers, many of whom are at work in the factory or working at home on materials brought from the factory.

Very opportunely the National Housing Reform Council of England presents a report on overcrowded tenements in Oldham, from which we get this glimpse of Lancashire conditions:

> The investigation has shown that there are over 145 persons overcrowded in one-room tenements. 2,005 in two-room tenements, 280 in three-room tenements, and 7,761 in four-room tenements—all this resulting in an overcrowding of 10,191 persons, among whom there has been a high death-rate and a high percentage of infantile mortality.

The protectionist considers the real cost; the free trader bases his argument on the apparent cost. It is because of these different views of things that an "increase in the price" which has such terrors for the free traders still to be found in Manchester, Eng., is looked upon with comparative indifference by the protectionists still left in the United States. For like reasons "failure in the export trade" does not appear as dreadful to us as it evidently does to the "Guardian." The welfare of a people is not necessarily measured by what they produce and send out of the country. A better standard is found in the amount of food, clothing and other necessaries consumed at home. It is by this standard of consumption that free trade and protection should be judged.

We regret that we cannot give the "Guardian" complete and accurate statistics of the per capita consumption of the necessaries of life in every country on earth. Our much

maligned friend, the statistician, has almost completely neglected this important branch of his work. It is fortunate, however, that the records of the cotton trade are so complete as to make it possible to determine closely the per capita consumption of cotton by the last consumer in the United States and throughout the rest of the world. The result is the more valuable as a standard for comparison because of the general consumption of cotton goods in all countries. Here are our figures:

DISTRIBUTION OF COTTON.

United States:

Crop	6,047,000,000	lbs.
Imported	311,760,255	"
	6,358,760,255	"
Exported	4,286,065,044	"
Consumed by 90,000,000	2,072,695,211	"

World Outside of United States:

World's crop	8,859,500,000	lbs.
Consumed in U. S.	2,072,695,211	"
Consumed by 1,350,000,000	6,786,804,789	"

The value of the goods imported and exported has been reduced to raw cotton equivalents at the rate of 40 cents a pound for imports and 28 cents a pound for exports.

PER CAPITA CONSUMPTION

In the United States	23 lbs.
Outside of the United States	5 lbs.

We frankly admit that these figures leave much to be desired. We would like to have separate statistics for each product and each country, but diligent search has failed to reveal them. Neither the Royal Statistical Society at London nor the Census Bureau at Washington can supply them, and so we must for the present be content with these figures for the cotton trade. They show that the inhabitants of the country with what is probably the highest tariff on earth use nearly five times as much cotton per capita as do the people in the rest of the world.

This exhibit we present to the "Guardian" in June to supply the omission made when we "conveniently left the subject" in April. We invite the "Guardian" to compile the figures for the United Kingdom that a comparison of real wages, measured by the consumption of the necessaries of life, may be made between England with a low tariff and America with high protection. The issue between free trade and protection will not, however, wait for the appearance, of statistics. Mankind, wiser than the statistician, has an instinctive knowledge of the hidden truth, and acts accordingly. The world has committed itself to protection. Even England, whose policy has always been that of protection to British trade, is now rapidly moving toward the adoption of protection in the form of duties on imports. What if that should result in "Lancashire's ceasing to be itself and degenerating into a third-rate county"? Would the scattering of ten million human beings, now crowded within ten miles of Manchester town hall, mean a decrease in the sum of human happiness? Would the increased supply of fresh air and sunshine and other necessaries of life to those who might move away and to the "third-raters" who remained in Lancashire, be a misfortune? Is it entirely safe to regulate the affairs of the twentieth century by the maxims formulated at Kircaldy by a master of clear English in the eighteenth? After all, is not free trade a local issue? We ask for information.

Wake Up!

Unless the manufacturers of the country get busy at once they will find the revision of the tariff intrusted to those who have had no experience in that work and no knowledge gained by personal experience with the results of tariff reduction in the past. Edwin H. Marble, of the Curtis and Marble Machine Co., Worcester, Mass., evidently realizes the seriousness of the situation. During the past few months he has taken part in an animated tariff discussion in the Worcester newspapers, making the German agreement the special object of attack. Following are some typical extracts from a recent interview with Mr. Marble, published in the Gazette:

By that treaty, Mr. Marble states, in an interview with a Gazette reporter, Germany was enabled to increase her textile exports to the United States by $2,000,000 and over in six months following July 1, when the treaty became operative and of the $25,000,000 worth of textile exports during all, with the exception of about $2,000,000 worth of cotton laces, are goods which could be manufactured here, but not in competition with Germany because of the cheapness of German labor compared with this country.

The textile industry touches us because Worcester is the largest textile machine city in the country and anything which touches textiles of the country affects us directly.

Owing to the low wages paid in Germany, they can buy American cotton in Texas, take it to Europe, transport it to Saxony and the cotton manufacturing sections of Germany where they have no such natural advantages as we do here.

The treaty was supposed to be one of reciprocity, but it was left with Germany to decide what a fair return constitutes in concessions on their part. We can make every yard of those goods now imported here with the exception of the cotton laces, but at the present time we cannot compete with them in prices because of the cheapness of their labor.

This cotton lace industry is comparatively new in this country. Three fair sized establishments have been started in recent years. On certain patterns of net, hand labor is called for to a considerable extent. This hand labor is with us expensive. During a visit to one of these establishments recently, one girl told me that while she was getting only $4.80 for a 63-hour week in Germany, she was paid immediately upon her arrival in this country 13 1/2 cents an hour for 56-hour week for the identical work.

An older sister, who is an expert in her line, was paid about 25 per cent. more per hour here than at her home city, Calais. A third employed as an instructor was equally well pleased with an increase of 30 per cent. and additional advantages. None of these were desirous of returning to old country wages and conditions.

The fact that a careful examination of those articles of textile manufacture, which require a large amount of hand labor shows the necessity for a more thorough knowledge of the scale of wages paid in this and foreign countries and in making any arrangements or reciprocity treaties. It is evident that sound business men should be relied upon rather than some of the theorists that are connected with government investigating committees.

One of the committee junkets was taken by three gentlemen occupying government positions who, accompanied by their wives, undertook to examine the evils of or complaints against our custom departments. They traveled a few days abroad at the rate of 130 miles per day and were able to give a very "comprehensive" report on their return. No sane business man would have been able to render a report which satisfied his conscience in quite so short a period of time.

One of these days American manufacturers, particularly textile manufacturers, will wake up and follow Mr. Marble's example en masse. The sooner the better.

The World's Cotton Census.

The plan is now under consideration of signaling daily the standard time by wireless from the Eiffel tower at Paris to all parts of the world. The most impressive feature of such a system is not the achievement of science on which it would be based, because we are fast becoming accustomed to wireless telegraphy and accepting it as a matter of course; it is rather the bringing of the world's inhabitants together, as a result of this instantaneous communication. The same idea is suggested by the progress now being made by the European Cotton Federation in the collection and dissemination of information regarding the cotton stocks and consumption in all parts of the world. In the former case the information is determined at the point from which it is disseminated; in the latter case it is first laboriously collected from all parts of the globe, then classified and summarized at the central station, Manchester, from which place the results are sent around the world. Both cases, however, are identical in that they bring the people of all countries closer together, giving to all a common knowledge of important facts to guide their industrial and commercial operations. This important work of gathering statistics on March 1 and September 1 of each year of the cotton on hand at the mills and consumed during the preceding six months, was begun in the fall of 1905. The large measure of success attained is indicated by the fact that the latest Federation returns include 113,460,259 spindles out of a total of 125,097,583. This result is reached by including all of the spindles in the United States which are reported complete on September 1. This large proportion, over 90 per cent., already reached, warrants the belief that the census will in the near future cover practically all of the world's cotton spindles.

The results of the six semi-annual reports thus far issued are summarized in the following tables. The American report is given separately because it has been taken from

the U. S. census reports which are issued only once a year. With commendable enterprise the European Federation has supplied this omission by making a direct canvas of American mills and securing returns for March 1, 1908. The lack of time prevented this first report from American mills direct to the Federation from being complete. The large number of spindles reporting warrant us, however, in estimating the stocks for the missing spindles at the reported average, which we have done. It is to be hoped that the Census Department at Washington will hereafter issue a semi-annual report of mill stocks and consumption, and not leave half of this important work to be done by the European Federation.

The value of these reports, depending in large measure on their completeness and the ability to make comparisons with former periods, will increase with time. The returns are given separately for each country, enabling the situation to be studied both by districts and as a whole. Following is the report for March 1, this year:

MILL STOCKS OUTSIDE OF THE UNITED STATES

Date	Spindles	Bales on hand	Bales used per week	Stocks will last
Aug. 31, '05	46,726,929	935,237	103,269	9 weeks
Feb. 28, '06	54,297,537	1,237,180		
Aug. 31, '06	66,072,303	1,210,610	145,603	8.3 weeks
Feb. 28, '07	71,054,503	1,911,071		
Aug. 31, '07	74,279,078	2,368,410	190,811	12.4 weeks
Mar. 1, '08	78,984,106	2,342,127		

STOCKS AT AMERICAN MILLS.

Date	Total Spindles	Bales on hand	Bales used per week	Stocks will last
Aug. 31, '05	23,687,495	776,801	82,288	9.4 weeks
Aug. 31, '06	25,250,096	688,312	94,413	7.3 weeks
Aug. 31, '07	26,242,000	996,000	95,904	10.4 weeks
Mar. 1, '08 est.	27,000,000	1,089,119		

The International Cotton Federation deserves great credit for its work in compiling these statistics and should receive the hearty co-operation of every cotton spinner on earth in making the census complete. This can be done by responding promptly to requests for reports either direct to the Federation at Manchester or to the Census Bureau at Washington. In either case the report is kept secret and known only by a number to those who classify and summarize the figures. This classified summary is completed and mailed to every spinner who may have made a report. The figures come right home to the spinner. They show him the state of this important factor of cotton stocks throughout the world, and afford an invaluable means for forming a correct judgment of market conditions on which the success of the mill depends. The duty a mill treasurer owes to his stockholders makes it incumbent on him to co-operate in the compilation of these cotton statistics.

The Fall River Sliding Scale.

Wages in the cotton mills of Fall River, Mass., were reduced on May 25 from a basis of 23.96 per cent. to 19.66 per cent., a reduction of 17.94 per cent. This reduction was in accordance with the sliding scale agreement, which provides that wages shall rise and fall with the so-called margin according to the following scale:

Margin	New Wage Basis
115 points	23.96 cents
110 "	23.42 "
105 "	22.87 "
95 "	21.78 "
85 "	20.69 "
80 "	19.66 "
75 "	18.68 "
72½ "	18. "

Wages are readjusted in November and May, the rate for the ensuing six months conforming to the average margin for the preceding six months. For the six months (26 weeks) ending May 22, 1908, the margin and prices on which it is based have fluctuated as follows:

1907	Cotton	28 inch 64x64	38½ inch 64x64	Margin
Nov. 29	11.39c.	5¼c.	5¼c.	1.250240
Dec. 6	11.85⅜c.	5¼c.	5⅜c.	1.181040
Dec. 13	12.06⅜c.	4 15/16c.	5⅜c.	.990104
Dec. 20	11.88⅛c.	4¼c.	5⅜c.	.919557
Dec. 27	11.74c.	4¼c.	5¼c.	.927425
1908				
Jan. 3	11.64c.	4 7/16c.	5⅜c.	.918700
Jan. 10	11.38⅛c.	4¼c.	5¼c.	.914720
Jan. 17	11.825c.	4¼c.	5¼c.	.879390
Jan. 24	12.05⅜c.	4⅛c.	5 1/16c.	.866110
Jan. 31	11.75⅜c.	4⅛c.	5⅛c.	897980
Feb. 7	11.70⅜c.	4⅛c.	5 1/16c.	.884740
Feb 14	11.59c.	4c.	5 1/16c.	.846100
Feb. 21	11.40⅝c.	4c.	5¼c.	.856470
Feb. 28	11.42c.	3 15/16c.	5 3/16c.	.771480
Mar. 6	11.56⅜c.	3⅞c.	5⅛c.	.738740
Mar. 13	11.40c.	3⅞c.	4 13/16c.	.714130
Mar. 20	10.98⅛c.	3½c.	4 7/16c.	.688298
Mar. 27	10.46⅜c.	3 5/16c.	4⅛c.	.676392
Apr. 3	10.45c.	3⅜c.	4⅛c.	.619531
Apr. 10	10.29⅛c.	3⅜c.	4⅛c.	.611505
Apr. 17	10.025c.	3⅜c.	4⅛c.	.632837

Apr. 24	10.00⅜c.	3½c.	4 11/16c.	.631321
May 1	10.11⅛c.	3½c.	4½c.	.597912
May 8	10.42 5c.	3 7/16c.	4⅛c.	.556706
May 15	11.03½c.	3¼c.	4 3/16c.	.527490
May 22	10.98⅛c.	3 5/16c.	4 3/16c.	.590390
Average				.794973

This six month period began immediately after the October panic and nearly every one of the twenty-six weeks has brought a reduction of the margin. The average for the six months being .794973, it was agreed that wages for the next six months should be based on a margin of 80 cents, making the basis 19.66 cents per cut, the rate in all departments being reduced in the same proportion. It is a cause of deep regret not only to the operatives whose wages have been reduced so greatly, but to the manufacturers and to the consumers of cotton goods themselves that conditions are such as to necessitate this cut in wages. Experience has demonstrated over and over again as it is demonstrating now that all of us, operatives, manufacturers and consumers prosper or suffer together. Speaking in a general sense the American people find it hardest to buy cotton goods when such goods are cheapest.

One feature of the situation at Fall River deserves special mention. It is the manner in which the operatives have kept their agreement and submitted to this heavy cut in their wages. The spirit they have shown deserves the highest praise and is reflected in the following extract from the report presented to the operatives by James Tousey, president of the Fall River Textile Council:

We, the members of the Textile Council, regret that such conditions have arisen which should call for the reduction in wages as stated in the agreement; and while we realize that the reduction is a steep one, we hope and feel that you will not lose sight of the fact that it is being taken from the highest rate of wages that has ever prevailed during the life of the Textile Council and for many years previous to its existence. It is safe to say that we can go back at least 35 years and then only under the most exceptional conditions can a comparison be made.

It should not be necessary to remind you that the rate of wages paid during the last 12 months is 10 per cent. higher than ever was paid in the city during our life as combined unions, and further that it is 20 per cent. higher, with an exception of a period of about nine months a few years ago.

With regard to the present agreement, we do not nor have we ever taken and declared that it is the panacea for all difficulties existing between the employer and employe in our trade, but we do declare emphatically and without reserve that it is and has proven to be the best agreement for the operatives that was ever accepted by the employers for the control and regulation of the rise and fall in wages, and further assert, for reasons stated above, that it is well worthy of a trial of experience and as a guide in dealing with such questions in the future.

Until such time that we see that a change is necessary in the margin scale, we say to our members that this agreement should be honorably lived up to, as it was entered into honorably by a vote of acceptance and indorsed by all of the unions at their general meetings before being signed by the representatives of the respective associations contracted.

Even though the reduction in wages is greater under the agreement than was anticipated by its most ardent supporters, and which, we regret, we are not prepared to declare that it is a failure, because, owing to the unfortunate trade conditions previously referred to, which suddenly and unexpectedly worked havoc with our industry, we do not believe it has had a fair trial; and until such time that it has, the least that can be expected is that judgment should be suspended and hasty action upon our part be rejected.

The only comparison that we can draw to compare with present conditions is that which existed in 1898, 10 years ago, when the market got down about 50 cents, and we were obliged to accept reductions in wages which brought the weaver down to 16 cents per cut and all other departments in proportion. The margin today is but 57.61 cents, and it has been between the fifties and sixties for nearly two months, and the price per cut under the reduced rate is 19.66 cents per cut, with operatives in all other departments in proportion, a matter of about 20 per cent., a higher rate than prevailed under similar conditions in 1898, to say nothing of other improved conditions.

Again repeating our regret for the reduction of wages that goes into effect Monday morning, brought about through conditions over which neither employer nor employe has control, we bring these matters to your attention, so that you can deliberate on the conditions and situation with more intelligence and give to it that fair, just and conservative consideration that all such important subjects of its kind are entitled.

Let us all hope that conditions may change speedily so that when another readjustment of wages is made next May, the rate prevailing during the six months that have just ended may be restored.

Cocoanut fiber is the reddish-brown, exceedingly tough fibrous substance in the flesh of the fruit, and enclosing the hard shell of the oval nut of the true cocoanut palm, which is indigenous to the South Sea Islands and attains a height of about 100 feet.

A National Wool Conference.

We want to suggest to the wool growers and wool manufacturers of the United States the desirability of their getting into closer working relations. Greater cooperation is not only desirable; it is a necessity if the highest productive efficiency of the wool growing and manufacturing industry is to be attained.

The first and indispensable step in promoting cooperation is the holding of a wool conference at some central point, at which representatives of all sections of the trade and its allied branches can meet, discuss unsettled problems, exchange views, and what is best of all, shake hands with one another, look each other in the face and realize that their interests are common to all and that the differences which now appear to divide them are largely imaginary, the natural result of their lack of acquaintance with each other's purposes and difficulties. Misunderstandings having been removed, the wool conference would find many important problems whose solution is for the benefit of both growers and manufacturers.

First comes the question of the wool supply. How can the United States be made independent of the foreign wool grower? At the present time more than half the wool, scoured weight, used in this country is grown in foreign countries. Last year, 1907, we imported raw wool and wool goods which were equivalent to 258,722,489 pounds of light shrinking wool valued at over $81,000,000, duty paid.

Can this wool now bought abroad be grown at home? How can this $81,000,000 now paid to foreign countries or to the government in the form of duties be put into the pockets of American wool growers? These are the questions we all want answered. It is no use to tell us about certain grades needed for mixing that cannot be raised in the United States. American wool growers and manufacturers in friendly conference should decide that question. We believe that the wool manufacturers of this country will be found as desirous of developing the domestic wool supply as the wool growers are. They recognize that producing the wool we use instead of importing it means a great increase in the purchasing power of the growers and increased prosperity in all branches of business. Wool manufacturers also believe in American prices for American wools. They know that it is a great deal better to run their mills full at a profit with wool at fair prices than to run them slack at a loss with wool at low prices.

There are many other problems connected with that of the wool supply. For example, there are the ravages of wild animals and dogs among the sheep of the country. There is the question of how government land can be utilized to the best advantage by wool growers without injury to other interests. There is the question of improving the method of packing wool for shipment. And closely allied to the last is the problem of how to improve the methods of marketing wool.

Co-operation between growers and manufacturers is essential for the solution of every one of these questions. Moreover, combination of the now separated branches of the wool industry (which includes both the growing of wool and the manufacture of wool goods), will mean a great increase in the power and influence of the growers and manufacturers.

We have outlined a few of the more or less technical problems that face the wool industry. In addition there is the ever present possibility of an attack on the wool growing and manufacturing interests of the country. It is by no means certain that an attack has not already begun. At any rate the need for united action in defense of the common interests of the wool industry may arise suddenly, and for that reason no time should be lost in bringing wool growers and manufacturers together. That union to be effective should be brought about on broad lines. It should bring all growers and manufacturers together, giving the smallest an opportunity to be heard and to exert the influence to which he is entitled. There should be no suspicion of control by one man or a little coterie. For this reason it is important that the movement toward a national wool conference and greater co-operation in the wool industry should be inaugu-

rated by men broad enough to realize that wool growers and manufacturers may come and they may go, but the wool industry itself goes on forever.

When Japan Hits Lancashire.

An inspector of the Irish Congested Districts Board, J. D. Walker, recently appeared before a committee of the House of Commons and after stating that he had been a free trader all his life, gave testimony that showed plainly how certain hard facts were beginning to tell on his convictions. He first told of the low wages and unhealthy conditions prevailing among the workers in West and North-West Ireland and of the efforts to provide the people with employment at their homes, in lace-making, embroidery and similar work.

These efforts, he stated, have been thwarted to a great degree by foreign competition. To illustrate this he showed the committee a piece of crochet work made by hand in Ireland at a cost of 10s. ($1.50) a yard, and added that the same pattern, matching the Irish goods so closely that few people could detect the difference, was made in Germany to sell at 25 cents a yard. Switzerland and Japan were also making goods at prices that Ireland could not meet, even with the low Irish wages. Asked what suggestions he had to offer Mr. Walker replied:

> We are between the upper and nether millstones of foreign competition, and although I have been a free-trader all my life, I do not see my way out of it. When the Japanese hit Lancashire hard the question would be studied. It would never be studied so long as it merely hit Donegal.
>
> A member: Do you think something might be done by restricting foreign competition?
>
> Mr. Walker: If you had only the home producer to consider that might do, but we have to compete in the case of New York, for instance, with Japanese goods. I do not see any way out of that. Perhaps the only way is to have faith in people—to have blind faith.—(Laughter.)

This life-long British free trader, who is wavering in his faith, illustrates the fact that a man is a free trader or a protectionist, not so much from principle as from selfishness. Mr. Walker's faith in his fetish wavers when he finds that free trade does not pay in his line of work. And so it is everywhere. Lancashire will be for what she calls free trade as long as it pays Lancashire. The United States will be for protection as long as it pays the United States. When Japan hits Lancashire, or when the United States can undersell the rest of the world, the situation will be reversed. And there may be more truth than fiction in Mr. Walker's prediction that Lancashire would not become studious as long as Japan hit only Donegal.

Artificial Silk.

The recent declaration of a dividend of 40 per cent., as compared with 35 per cent. last year, by the Vereinigte Glauzstoffabriken of Elberfeld, Germany, directs attention anew to the enormous profits made in the manufacture of artificial silk by the companies that control this industry on the Continent. The financial statement of the Elberfeld Co. for the year is as follows:

Profits:

	Marks.
Brought forward	290,051
Profits for the year	2,528,006
	2,818,057

This balance was disposed of as follows:

	Marks.
Dividend, 40%	1,000,000
Special fund	550,000
Workmen's fund	50,000
Sundries	271,247
Carried forward	274,471
Charged off	672,339
	2,818,057

The Fabrique de Soie Artificielle, of Tubize, Belgium, has also had a very prosperous year, reporting a net profit of 1,923,765 francs, as compared with 1,301,300 francs last year. This company announces an advance in prices by agreement with the other artificial silk companies, which are working harmoniously together to squeeze from the trade all that the traffic will bear.

The artificial silk industry is based on patented processes. As the laws of Continental countries have for years required the working of patented process, the manufacturers of artificial silk, like those of artificial dyestuffs, have been forced to locate their plants in those countries.

Wool Exchanges.

The system of dealing in textile materials on exchanges is in a bad way. While we are struggling with the problem of what to do with our cotton exchanges France is agitated over the question whether the wool exchange at Roubaix shall be abolished or regulated. There, as here, the trouble has been caused by abuses in exchange dealings, the principal charge being that members of the Roubaix exchange have used the facilities afforded by their position to promote their own interests and defraud the outside trader. In order to prevent the exchange from being abolished various propositions for regulating its affairs have been proposed, among them being the following:

The appointment of a controller connected with the exchange clearing house, whose duty it would be to oversee the exchange and expose all irregularities.

Each member of the exchange to make daily a detailed report of all transactions for the day and to give the controller any further information desired.

Membership to be for one year only. Each member to apply to the clearing house before the end of December for renewal of membership for the succeeding year. No appeal from decision of clearing house.

Any member found transacting business on the exchange at less than the regular brokerage fee shall be expelled immediately.

Severe penalties, including expulsion, imposed on a firm that may transact business on the exchange with any of the firm's branches, or in any way make "wash" sales of wool.

Standard samples corresponding with those kept at Buenos Ayres and Australia, to be stored in the exchange building at Roubaix and delivered on demand.

When prices rise or fall 40 centimes per kilogram (3 5/8 cents a pound) within a period of fifteen days in any month, the required deposit with the clearing house shall be automatically raised to $1,000 for new business, that is, for sales when the market is falling, and for purchases when prices are advancing.

The question has been referred to a commission composed of two senators, three deputies, two cabinet ministers, four representatives of chambers of commerce, representatives of the mayors of Roubaix and Tourcoing, a wool dealer and a member of the Roubaix clearing house. Their report will be of interest not only to the French wool trade, but to the textile trade of all countries in view of the general agitation of the exchange question at the present time.

The Cotton Industry in Lancashire.

No signs of decadence in the English cotton industry are disclosed by the 1908 edition of Worrall's directory, just received. On the contrary, it furnishes proof of the vigor of the English branch of the cotton trade, the total number of spindles reported reaching 55,218,024; and looms, 736,325. When the first edition of the directory appeared in 1882, it showed a total of 38,410,067 spindles and 167,856 looms. The next 22 years witnessed an increase of 6,785,574 spindles and 167,856 looms. In the last four years, 1905, 1906, 1907 and 1908, there was an increase of 10,022,383 spindles and 83,205 looms. In other words, 50 per cent. more spindles have been installed in Lancashire in the past four years than in the preceding twenty-two. Nor is this all. There are thirty-five new cotton spinning companies with mills in course of erection which are not included in the above totals. This is indeed the pace that kills, and it is not surprising that the older companies are willing to consider running their machinery to pile up stock and depress the market in order to discourage what they call the mania for building new mills. It is, however, somewhat misleading to call this rapid building of cotton mills in Lancashire the result of a mania. The cause is natural and found in tendency of capital to seek the most profitable market. It was too much to expect capitalists to buy British consols when the spinning of cotton was returning dividends of 20, 30, or even 50 per cent. to the owners of established mills in Lancashire. The increase of spinning capacity under those conditions was as natural as its cessation is likely to be in the near future.

The False Packing of Wool.

TO FORCE A REFORM.

A determined effort is being made by the wool trade to bring about an improvement in the packing of domestic wool by the growers. The abuses consist in the use of sisal twine and in packing inferior wool and rubbish in the fleeces. A sample of sisal twine taken from a fleece of Ohio wool is shown at Fig. 1. It is impossible for one who has not had practical experience in manufacturing worsted goods to realize the heavy losses to manufacturers resulting from the use of sisal twine for tying up fleeces. The sisal fibers get mixed with the wool and pass through the various processes of manufacturing, appearing finally in the cloth, as shown in Figs. 2 and 3, which are two of the twelve sisal fiber specks found in one yard of cloth made from Ohio and Pennsylvania wool.

Just think of what an average of twelve of these sisal fibers to a yard of cloth means to the manufacturer. If he is making 1,000 yards a day, which is not a large production, he has 12,000 of these sisal fibers to remove from the cloth every day. The extent of this sisal nuisance is also illustrated at Fig. 4, which shows a bunch of sisal fibers picked from the cloth in one day in one of our worsted mills. These fibers twisted and imbedded in the cloth must be picked out before the goods can be sold. Under the most favorable conditions the work of removing them is slow and expensive, requiring skilled operatives. The cost of the labor is, however, not the only expense. Frequently it is found impossible to remove the sisal without leaving an imperfection for which the manufacturer must make an allowance of one-eighth yard to the buyer. In some cases these imperfections are so numerous that the whole piece of cloth must be classed as a "second" and sold at a heavy discount.

Farmers use sisal twine because it is cheap. For the sake of an apparent saving of a few dollars they put up their wool in such a form as to cause a loss of thousands of dollars to the manufacturer. As a matter of fact, however, much of this heavy loss is finally paid by the wool growers themselves through the reduction in the market price of wool tied with sisal twine.

Many exasperating conditions are encountered in the woolen and worsted business, but few if any are more exasperating than to find the finished product seriously damaged as a result of the inexcusable carelessness of farmers in using sisal twine for tying up the fleeces. So serious has the trouble become that wool dealers and manufacturers have united in order to force

FIG. 1. A SAMPLE OF SISAL TWINE TAKEN FROM OHIO WOOL.

the growers to stop the practice. As a result the following circular has been signed by the leading firms in the wool trade and distributed widely throughout the wool growing sections of the country:

For many years past the wool merchants of the United States have made ineffectual efforts to induce the wool growers to improve their methods in preparing wool for market. One of the principal abuses is the tying up of fleeces with sisal twine, or so-called binder twine. The loose fiber from the twine clings to the wool through all the processes of manufacture, and causes imperfect goods, with consequent loss.

We believe if this serious matter is called to the

attention of growers they will co-operate with the dealers and discontinue the practice of tying their wool with such twine as described, thereby putting American wools in closer competition with those of foreign countries.

We, the undersigned, hereby agree to at once notify all our correspondents and buyers in the fleece wool section that we shall not accept wool tied with sisal twine nor wool that is tied with an undue amount of string, as merchantable.

FIG. 2. A SISAL FIBER IN THE WARP OF WORSTED CLOTH.

Boston, Mass.:
Jeremiah Williams & Co.,
Luce & Manning,
Brown & Adams,
Cordingley, Barrett & Co.,
Dewey, Gould & Co.,
Farnsworth, Thayer & Stevenson,
Hobbs, Taft & Co.,
Patterson & Co.,
R. D. Smith & Son,
Rosenthal Brothers,
Wendell P. Yerrinton,
Williams & Smith,
John G. Wright,
Crimmins & Peirce,
Dupee & Meadows,
Hallowell, Jones & Donald,
Goodhue, Studley & Emery,
D. I. Baker & Co.,
J. Koshland & Co.,
Hecht, Liebmann & Co.,
O. N. Purdy & Co.,
Eisemann Bros.,
W. S. Henry, Jr., & Co.,
Mauger & Avery,
Parsons Bros.,
Salter Bros. & Co.,
Chas. F. Cross & Co.

Chicago, Ill.:
H. A. Schoenen,
Isaac Weil & Sons,
Bolles & Rogers,
Silberman Brothers,
H. T. Thompson & Co.,
The Howard-Boyer Wool Co.

Philadelphia, Pa.:
Coates Bros.,
Samuel Whan & Co.,
Justice, Bateman & Co.,
Bullock Brothers,
Henderson & Co.,
Fred Wolstenholme,
Wm. Anderson, Jr. & Co.,
Lewis & Grove,
Chas. J. Webb & Co., Inc.,
Woolston & Moore,
John A. Leslie & Co.,
Bradford Smith & Co.,
C. Shillard Smith & Co.,
Stone & Christie,
Jennings & Stansfield,
I. Reifsnyder, Son & Co.,
Chas. O. Herbert & Co.,
Wm. Brown & Co., Ltd.,
Coffin & Son.

Horkheimer Bros., Wheeling, W. Va.
J. S. McConnell & Co., Mt. Vernon, O.
Trangott Schmidt & Sons, Detroit, Mich.
Chas. S. Sweet, Troy, N. Y.
Agnew & Company, Watervliet, N. Y.
H. A. Perkins & Co., White River Junction, Vt.
Henry Marcus & Son, Baltimore, Md.

FALSE PACKING.

Other abuses such as the use of an excessive quantity of twine and the packing of rubbish in the fleeces are simply stealing. Fig. 5 is a photograph of 121 feet of twine recently taken from one fleece of Ohio wool by Luce & Manning wool dealers at Boston. About twenty feet of twine to the fleece is a

fair allowance for domestic wool. As the twine costs the wool grower only 5 cents a pound, while the wool in this case was sold for 30 cents, the addition of 101 feet, weighing about 1/2 pound, in excess of a fair allowance, was a fraud that should be punishable by law. This, to be sure, is an extreme case, but it illustrates a practice that is growing and will continue to grow unless drastic measures are adopted for its suppression. Another form of this fraud is the use of very heavy twine such as is shown at Fig. 6, which measured 99 feet to the pound, as compared with 242 feet per pound of the twine shown at Fig. 5, and 1,653 feet per pound of the twine used on Australian wool.

FIG. 3. A SISAL FIBER IN THE FILLING OF WORSTED CLOTH.

FIG. 4. SISAL FIBERS PICKED FROM ONE DAY'S PRODUCT OF A WORSTED MILL. THERE ARE ABOUT 11,000 FIBERS IN THIS BUNCH.

BETTER METHODS IN AUSTRALIA.

They manage such things better in Australia and New Zealand. In these great wool-growing countries the packing and sale

of wool are carefully regulated by laws that are enforced. As a result Australian and New Zealand fleeces are fastened with a very

FIG. 5. TWINE MEASURING 121 FEET AND WEIGHING ½ POUND TAKEN FROM ONE FLEECE OF OHIO WOOL.

small quantity of very good twine. We recently searched through a large lot of Australian wool for some of the twine that we might compare it with that used on wool in the United States. We could not find any, and finally obtained the sample shown at Fig. 7, which has been taken from some Australian fleeces a short time before. It is made of a fine linen fiber, is smooth and twisted hard, so that no fibers from it can get into the wool.

TWENTY-TWO SHEEP TAILS IN ONE OHIO FLEECE.

Then there is the rubbish mixed with the wool. It is a common practice for growers

FIG. 6. A SAMPLE OF THE HEAVY TWINE MEASURING 99 FEET PER POUND, USED ON OHIO WOOL.

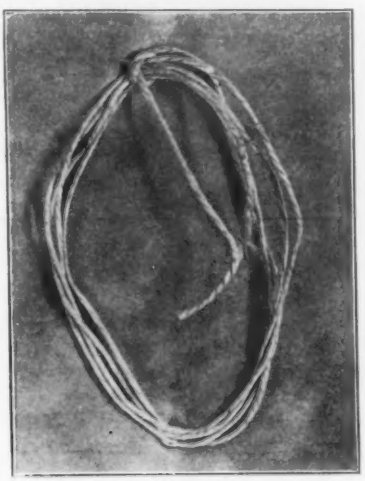


FIG. 7. A SAMPLE OF THE FINE TWINE MEASURING 1600 FEET PER POUND, USED ON AUSTRALIAN AND NEW ZEALAND WOOL.

to put inferior wool into the bags, selling the whole lot as high grade. When the wool is graded by the buyer the "rejections" form a

large proportion of the lot. The day before our call on Luce & Manning, Boston, they had found twenty-two sheep tails in one

FIG. 8. ONE OF THE TWENTY-TWO SHEEP TAILS FOUND IN A FLEECE OF OHIO AND PENNSYLVANIA WOOL.

fleece in a lot of 3/8 blood wool grown along the boundary line between Ohio and Pennsylvania. One of these twenty-two tails is seen at Fig. 8.

OTHER OBJECTS OF INTEREST.

As we watched the men examining this lot of wool, one of them drew a lady's garter from the fleece he was handling. We had to rely on our imagination as to the circumstances under which this useful article of apparel had found a resting place in a fleece of Ohio wool. Sticks, stones, dirt and all sorts of rubbish are found in American wool. An employe of the Boston firm, above mentioned, stated that in one fleece he had found a boulder weighing 7 pounds, which the wool grower had sold at the price of wool.

Dishonest?

Of course.

Nothing more dishonest has been disclosed by the investigations of the insurance companies and other large corporations during the past few years.

NO CLASS DISTINCTION.

These practices by wool growers show plainly that financial and commercial crookedness is not confined to the possessors of great wealth. The average of integrity will be found much the same in every branch of legitimate business. Carelessness, greed and an easy conscience make legal regulation as necessary for the growers of wool as for the railroads that transport the wool or the manufacturers who convert it into cloth. Nor does the average of integrity vary much between different countries. Australian and New Zealand wool is packed more honestly than American wool because in this particular case the statutes and their administration are better in Australia and New Zealand than in the United States.

HOW TO REFORM.

No reform of existing abuses whether in the packing of wool, railroading or manufacturing can be brought about unless the malefactors are forced to reform. This force may be temporarily applied by individuals in times of business depression as the wool trade is applying it now by a refusal to buy wool that is falsely packed. When business revives, however, the dishonest wool growers will again have the whip hand, and what was gained may be quickly lost.

In order to effect a permanent reform the widest publicity should be given to the abuses, their dishonest character exposed, and a public sentiment awakened that will not only place corrective laws on the statute book but compel their enforcement. In accomplishing this result we believe none will be more ready to co-operate than the great majority of the wool growers themselves, who are as desirous as any class of producers of ridding their trade of the black sheep and stamping out dishonest practices, not only because they are dishonest, but because honest methods pay best in the end.

Seasonable Fabrics.

DRESS GOODS.

There is practically no change in the dress goods market. Buyers who are placing their fall orders continue to work along conservative lines and are very cautious not to load up early in the season. Fancy weaves are selling more freely than plain goods, as the buyers realize that the mills will not make up any fancies for stock and under these conditions they have started to place their orders to insure prompt deliveries.

Fancy weaves in one color are attracting considerable attention among all branches of the trade. Diagonals, herring-bones and cheveron stripes appear to be the most desirable. Fig. 1 shows a 48-inch diagonal from Wm. F. Read & Sons Co. at 75 cents a yard.

Fine quality broadcloths still continue to be the favorite dress goods fabric for the fall trade. Orders on these goods are being placed with much more freedom as the buyers believe that there will be a big demand during the entire season.

Panamas, serges and unfinished worsteds are taking very well, especially with the cutting-up trade.

The importers and domestic selling agents of voiles report that business is good in all grades and that orders for staple numbers are coming in very freely.

Orders for low priced fancies are not being received as fast as the mills desire them. The trade is going ahead rather slowly on these goods as they feel that later in the season some of these goods will be let out at cut prices.

SILK.

Conditions in the silk market have shown a slight improvement during the last few weeks. Rough pongees and foulards are finishing up the season very strong. The manufacturers feel confident that they will clean up their stocks through the regular channels before the end of the season. Earlier in the season it looked as if it would be necessary to dispose of their over-stocks through the auctioneer.

Owing to the changes in price of raw silk,

FIG. 1.

the manufacturers have curtailed their productions, and are buying on the hand-to-mouth basis and making silks to order. It is now estimated that only 50 per cent. of the silk looms in the country are running. These conditions will not change until the raw silk market gets on a firmer basis.

The demand for plain colored taffetas is good and is increasing as the season progresses. The prices on these goods have been reduced.

The advanced orders placed for silks thus far this season are considerably behind last year. Buyers feel inclined to wait and those that are placing orders are buying in small quantities.

The fall lines displayed by the different manufacturers contain some very attractive novelties. Satin faced fabrics such as messalines in both plain and fancies seem to be the features. Fig. 2 shows a 20-inch hair-line stripe messaline from Pelgram & Meyer at 72 1/2 cents, which has taken very well in all shades.

Fancy taffetas are coming very strong for fall in stripe effects, especially in the herringbone and cheveron weaves.

FIG 2.

Satins are increasing in popularity in all grades. It is predicted that the coming season will be the largest satin season that the manufacturers have had for some time.

Black taffetas are selling very well considering that it is between seasons for this class of silks. Future orders on black taffetas are not being placed as early this season as usual.

Velvets and velveteens have shown an improvement. Prices on these goods have been reduced about 5 to 7 1/2 per cent. since last season.

COTTONS.

During the past month prices have been revised on all grades of cotton goods. The well known brands of domestics have been reduced about 10 per cent. It is now possible for a buyer to supply his wants at lower prices than for the past two seasons.

Business has shown quite an improvement in the past few weeks. Buying is being done more freely and larger orders are being placed, as the trade in general feels that prices have reached the bottom.

Spring wash goods such as printed lawns, printed batiste, dotted Swiss, etc., are not selling as well as usual owing to the cool weather. Most of the jobbers are offering these goods at reduced prices as they realize it will be impossible to move them later in the season. The American Printing Co. have reduced the price of prints from 6 to 4 3/4 cents, all other lines in proportion.

The agents of dress ginghams have reduced their prices on the following well known brands: Toile du Nord from 11 1/2 to 9 1/2 cents; Bates' seersucker, from 10 1/2 to 9 cents; Amoskeag A. F. C., from 11 1/2 cents, less 10 and 2 1/2 per cent., to 8 1/2 cents, same discount; Amoskeag Utility from 9 1/2 cents, less 10 and 2 1/2 per cent. to 7 cents, same discount. With these prices the manufacturers feel confident that the trade will start in to place their fall orders.

The demand for apron ginghams still continues. The mills are making better shipments now. It is possible to pick up a good assortment for immediate delivery.

C. L. Bausher & Co. have reduced the Amoskeag apron ginghams from 6 to 5 1/4 cents.

Fruit of the Loom 4/4 muslin is being offered at 8 1/4 cents a yard, which is 3/4 cent under the former price, Lonsdale at 8 cents, Hills at 7 1/2 cents, Hope at 7 cents.

Converters report that the lining business for fall is showing up very well and orders are coming almost as freely as in former seasons. Prices in this branch of the trade have been reduced about 20 per cent. since last fall.

Sheer white goods are meeting with the usual demand, especially in the lower grades of India linons and Persian lawns.

Bordered lawns have been very good this season. Reorders on these goods have been received from all sections of the country on the popular priced numbers that cost from 9 to 17 1/2 cents.

Future orders on blankets and outing flannels are being placed freely during the past few weeks.

WASHINGTON NOTES.

(By Our Special Correspondent.)

When the final report of the Bureau of Corporations on the cotton exchange investigations is made public, judging from the summary of the first part, it will make interesting reading. From a study of the two systems followed by the New Orleans and the New York exchanges in the so-called "gambling in futures," it appears that while they do sometimes sell cotton on the first-named exchange, on the latter they sell "suckers."

* * *

An interesting portion of the Cotton Exchange report is the chapter on range of grades deliverable on contracts. Eighteen grades are recognized, this number having been reduced from thirty. Regarding the subject of cotton grading in general, there is opportunity for reform. For legitimate commercial purposes it seems absurd to consider thirty grades of American Upland cotton necessary; and not even eighteen grades were recognized formerly. There are experts, of course, who are able to detect small shades of differences, but the question might be asked how far it is necessary for the bona fide buyer of cotton, for the mills, to consider such small shades of difference. In past time I have seen cotton grading and stapling by experts—particularly of samples for award at the expositions—and, in many instances, have been impressed with the idea that the results were reached rather through a sort of rule of thumb, and at the dictum of the expert, than by any systematic line of deduction upon a given scientific basis. Perhaps when the U. S. Bureau of Standards shall have inaugurated its fiber work, and taken up the study of cottons, we will have a new system of grading—simple, practical and unerring—based upon scientific principles.

* * *

We are told in the summary of the cotton report that cotton is graded substantially on its color and the amount of leaf and other foreign matter which is mixed with it. From fair to good ordinary is known as "white" cotton, the "tinged" or "stained" grades being those which show discolorations. From this it might be inferred that no other physical properties, or characteristics in the cotton, or cotton fibers, are recognized as being of any importance to the manufacturer. If cotton grading, and price, depends alone upon such differences (a consideration of length, or staple, of course, being understood) it is time for a new line of scientific investigation to fix upon a method of obtaining the actual value of cottons based on their physical characteristics. With other fibers such characteristics as length, strength, elasticity, flexibility, fineness, softness, luster, as well as color and cleanliness of preparation, are duly considered. In the case of cotton the employment of delicate mechanisms might be necessitated, but at all events there could be no appeal from results reached by means of instruments of precision. When a cotton exchange expert has differentiated eighteen grades of American Upland cotton, could he satisfactorily demonstrate the precise differences if called upon to do so? I cannot think that cotton grading has yet been reduced to an exact science.

* * *

The average of all grades of Egyptian for

the past ten years in the Boston market has been 15.3 cents per pound as compared with 9.7 cents for American Middling Upland. The experimental work of the Department of Agriculture with this cotton has been chiefly directed toward acclimatization. It is a fact that newly introduced Egyptian seed does not give a profitable crop, while with careful seed selection, and acclimatization, after several years the same variety having become adapted to local conditions, yields excellent crops. There are other considerations, however, which are favorable to the cultivation of Egyptian cotton in the Southwest. The boll weevil, which has caused such great damage in Texas and Louisiana, has not yet invaded Arizona and Southern California, and while it is not believed that it could thrive to any great extent in a hot, rainless region, it is important that no cotton seed should be brought from boll weevil infested territory without rigid disinfection. All danger is obviated with imported cotton-seed that has been acclimated in the region.

* * *

So far the results with this acclimated cotton are very promising. One variety of the Egyptian type yielded at Yuma, in 1907, at the rate of 990 pounds of lint per acre, or almost the equivalent of two bales of American standard cotton. Samples of this Arizona cotton were submitted to 22 buyers or users of Egyptian cotton, who have classed it as equal to the best grades of imported Egyptian, and on the basis of the 1907 market, worth 23 to 25 cents per pound. The average price of all grades of Egyptian cotton at Boston in 1907 was 21.9 cents a pound. Out of 18 representative opinions of quality 11 furnished estimates of value at current prices which varied from 18 to 22 cents per pound—average, 20 cents. At that time American Middling Upland, Boston market quotations, was worth 12 to 12.5 per pound. The Imported Egyptian, low grade, 12-15.5; current, 14-18; good, 16.5-19; and high, 17.5-21. Arizona Egyptian was classed with the high grade imported. An average of ten samples showed a staple of 1.5 inches, hence superior to most grades of Mit Afifi, but inferior to best grades of Jannovitch. Two experts pronounced the Arizona product superior in this respect to the imported Jannovitch. Color: lighter than best grades of Mit Afifi but darker than Jannovitch. The "cling" or "barb," which are important quality characteristics in the manufacture of thread, was favorably commented on by two manufacturers. The opinion was unanimous that the Arizona Egyptian could be substituted for the best grades of Imported Egyptian. I am indebted to Mr. Culver of the Bureau of Plant Industry for information upon this subject, the full account of which will appear in Bulletin No. 128,—Egyptian Cotton in the Southwestern United States—soon to be issued.

While there is every reason to believe that Egyptian cotton may be made an important crop in the irrigation regions of the Southwest, the Department is urging farmers to begin in a small way. They must first learn how to produce and market the crop before investing much time or money in the new industry; meanwhile there are economic questions to settle, particularly in relation to the ginning of the crop, and ginning experiments will have to be made by the Department and a roller gin, such as is used in Egypt, has, I believe, already been imported.

* * *

While we are attempting to supplant the Egyptian trade by producing a home supply of Egyptian cotton, it is learned through a communication from Consul W. T. Gracey of Tsingtau, China, that a recent court order commands all viceroys and governors to encourage the people to cultivate cotton. There are several provinces in China where cotton can be produced to advantage, and the industry is to be studied in the United States and other countries by officials who will be sent out by the Board of Agriculture and Commerce.

"The Comptroller General of Customs has also been directed to draft regulations granting native-grown cotton special privileges in transit, so as to encourage the home industry. This industry is of the utmost importance to Chinese interests, and viceroys and governors must induce the Chinese to promote companies and further the cotton industry in every way."

The American Cotton Manufacturers' Association.

The twelfth annual meeting of the American Cotton Manufacturers' Association which was held at Richmond, Va., Wednesday and Thursday, May 20 and 21, is now a matter of history and will long be remembered with the most pleasant recollections by all the members and guests of the Association who were fortunate enough to be in attendance. The headquarters of this Convention was at the Hotel Jefferson, which is most admirably appointed for gatherings of this magnitude and importance. The wise selection of this "Palace of the South" by

the Board of Governors of this Association was endorsed many times during the few days spent there. True Virginia hospitality was showered upon the delegates present by the reception committee of the Chamber of Commerce under the chairmanship of Mr. John M. Miller, Jr., who was most ably assisted by a large corps of citizens and representative business men. Ample provision was made for the social end. The smoker Wednesday evening and the "Outing" Thursday afternoon were both largely attended and appreciated. The smoker was held in the assembly hall of the hotel, and a specially arranged program of an enjoyable nature was presented. The outing consisted of a most delightful trolley ride to the Lakeside country club, at which place refreshments of a substantial and soothing character were administered, the State coat of arms, the "mint julep," being in evidence.

The different papers of the program touched almost every phase of the business in which cotton manufacturers are engaged, and the discussions at times on the important matters were interesting and instructive. The opening session of the Association was called to order Wednesday morning, May 20, at ten o'clock, with President S. B. Turner of North Carolina in the Chair. Three addresses of welcome, all of them brief, were delivered by Governor Swanson, Mayor McCarthy, and S. Dabney Crenshaw of the Chamber of Commerce, through the instrumentality of whom the Convention was induced to go there.

Prayer was offered by the Rev. M. S. Colonna of Richmond. Governor Swanson said:

I welcome you whether you come from the North or the South, for Virginia has always been famous for its national patriotism. Your association has a broad, liberal and lofty purpose. It marks our modern progress, and I hope the time will come when all the cotton of the world will be manufactured in the United States. The Governor dwelt at length upon the resources of Virginia.

Arthur H. Lowe of Fitchburg, Mass., a former president of the Association, responded most admirably to the words of welcome of the three previous speakers and was greeted with rounds of applause during his response and at its close. Mr. Lowe said in part:

"I have been asked to respond to the kind words of welcome," said Mr. Lowe, "and I will gladly do so and be brief, but any Yankee from Massachusetts must fail if he stands up against three Virginians.

"This is a great country, and we are not pessimists. A year ago we met in Philadelphia and were happy; we had plenty of orders. Today we meet under different conditions. Most of us have cancellations or short bank accounts, but we have just as much courage as we had a year ago in Philadelphia.

"The Mayor has referred to the high manhood of the South, but these same ideals are held by

the people all over the country. No one section holds manhood, honesty and integrity higher than any other part of our counrty.

"Mr. Crenshaw has expressed the hope that in time all the cotton spinning would come to America. Great reforms and great revolutions move slowly, but you cannot bring all the operatives to the United States and do all the spinning here.

DEFENDS SOUTHERN SPINNERS.

"I doubt if the people in any section of the world have been so viciously criticised as the cotton

T. H. RENNIE, NEWLY ELECTED PRESIDENT OF THE AMERICAN COTTON MANUFACTURERS' ASSOCIATION.

manufacturers of the South. Now, I am one of them, for I operate a mill in Alabama. We have been branded as cruel and unkind, with the result that people did not desire to come into our section. We have been held up as driving children, and have been charged with white slavery, but there is no set of men in the world that ever did so much for a class and a large class as the Southern manufacturers.

"They have brought people from the mountains, where they lived almost like animals, in homes that were unfit, into the sunshine and given them hope, and I doubt if there is in the world among that class of people those who are more happy or healthy. They have been lifted up more than any class I ever read about. The Southern cotton manufacturers have done more to alleviate the condition of this class they are accused of oppressing than all the philanthropic organizations in the world that I know of.

"We have before us a serious proposition in this labor question. We have done in the South in a short space of time what it required New England fifty years to do. What we are doing now is important, for many operatives in the mills are going back to the farms.

"What are we going to do to replace that labor? We are here to discuss many important questions, but, in my opinion, the most important of all is the question of contracts. We may discuss it; we may arrive at conclusions, and decide on a form of words; but the value of the contract is in the honesty and integrity of the men who make it."

A number of subjects of vital interest to cotton manufacturers were presented and discussed, resolutions adopted and a feeling of optimism regarding business conditions prevailed generally After the election of officers, which resulted in the selection of Thomas H. Rennie as the president for the

S. B. TANNER, RETIRING PRESIDENT OF THE AMERICAN COTTON MANUFACTURERS' ASSOCIATION.

ensuing year, the delegates and guests departed for their homes with the feeling that the twelfth annual meeting of the American Association had been a complete success and could be looked back to with the feeling that it had been one of the most enjoyable, one of the most instructive, and one of the most important meetings ever held by this

healthy and fast-growing association. Following are the addresses and papers presented at the various sessions:

Address of President S. B. Tanner.

Since our last meeting the International Conference was held in Atlanta, Ga., at which this Association was represented in accordance with the resolutions passed at the meeting in Washington the previous year, and no doubt much good will come from this meeting. The cotton planters attended in large numbers, and by talking face-to-face with the foreign and home spinners they formed new ideas as to how cotton should be handled in order to obtain the best results for both interests. Many matters of interest to manufacturers and planters were discussed, which resulted in a broader and better knowledge of what is being done in the cotton manufacturing business by our neighbors at home and abroad.

A resolution was passed in reference to a permanent organization, but it seems that there has been some hitch in regard to it. This matter will probably be taken up at the European Conference at Paris, which meets in June, and to which our Association has appointed ten delegates.

Improvements have been continued during the past year as in the years preceding, along the line of betterments and welfare work for the employes. The Southern States have better common school facilities and longer terms, to which the mills generally subscribe liberally. The age limit has been voluntarily increased by the mills, as well as a reduction in the hours of labor. In addition to this, I believe most of the manufacturing states, North and South, have one or more textile schools. Besides this, some of the states—North Carolina in particular—has two industrial schools, one at Charlotte and one at Spray, for cotton mill employes, where they can attend school and work in the mills a portion of the time, and some of them also learn farming and other kinds of out-door work. It is gratifying to note that the school attendance is rapidly increasing each year. All of the mill villages are well supplied with churches and Sunday schools; some of the Sunday schools have over 500 pupils. A great many mills have erected Y. M. C. A. buildings, gymnasiums, libraries and graded schools.

A considerable increase in the wages of employes was made during the prosperous period which the mills had, but it is a regrettable fact that they did not generally appreciate it properly. For example, it was the order of the day for everybody to demand more for everything they had for sale, whether merchandise, labor or intellect, and everybody seemed willing to give full measure for the increased pay or render the same service, at least, for the additional pay, that they gave before, except a large part of the employes in cotton mills and in some other lines, who were indifferent or would refuse to perform the same amount of labor for the increased pay, and in addition to this they would refuse, in many cases, to work more than four to five days per week, or only as necessity demanded, as they received as much for this service as they had been receiving for six days before the advance, and spent much time migrating from one mill to another. This, of course, caused a shortage of labor and stoppage of machinery at a time when there was a great demand for merchandise at good prices, which resulted in greatly decreased earnings for both the mills and the employes, and making it necessary for the mills to incur considerable expense in sending to the mountains and remote places in this country, and also to foreign countries for help, which would have been unnecessary if they had put in full time, which was plainly demonstrated about the time the panic started and before the curtailment began.

The cancellations, and attempts to cancel contracts, have caused no end of dissatisfaction and severe losses in some cases during the last six months, and we have had numerous requests to

C. B. BRYANT, RE-ELECTED SECRETARY AND TREASURER.

formulate and adopt a form of contract which will be uniform, and binding upon all parties concerned, without question, so as to avoid such methods in the future. A committee was appointed at our last meeting to do this work and it will no doubt have the proper attention. A committee was appointed also to confer with a committee from the Cotton Exchanges to agree, if possible, upon some equitable basis for placing contracts and assuring the actual delivery of spinable grades of cotton at different points in the North and South, which would be a great convenience to the mills. It is to be hoped that something can be done, as the present methods are very unsatisfactory.

We have had numerous requests from members and associations to call a meeting of this Associa-

tion for the purpose of considering ways and means for combating the unusual, and seemingly disastrous situation confronting cotton manufacturers, but the Board of Governors felt that nothing could be accomplished by having such a meeting. The fact is that there was no precedent to which the country could point for comparison, and most people wanted advice, but few felt able to give it.

While the volume and character of the business of the country has been enormously changing, our tariff system has remained absolutely unchanged. Industries have been revolutionized, and yet the tariffs have remained identical since the Dingley Act, so that today an improved and enlarged industry is suffering severely from the necessity of working under a tariff which is obsolete in respect to the rates of duty, and obsolete in respect to the fact that there is no way to change one item except by upsetting the whole list. The manner of determining tariff is the same today as in colonial days. The early Congresses at least made a very fair list, because the businesses covered were not enormous, either in variety nor quantity, and the interests to be protected were not enormous either in variety or quantity. It would seem that we ought to have a method of handling the tariff by which item by item could be taken up and passed upon as a legal case is by a court, and in this way increase our export trade immensely and also regulate all of our trust prices and troubles.

We have reached the time when our domestic markets are not sufficient to absorb our manufactured products. Congress is naturally charged with the control of all matters relating to foreign trade. The industrial interests of this country require that we must get part of the trade of foreign countries. It seems to be generally conceded that the way to do this is to create a merchant marine. The South has consistently opposed this—only a few prominent Southern men have advocated it publicly—Mr. D. A. Tompkins, I believe, has been the leading advocate in the South for several years of a merchant marine and subsidized ships, and it is encouraging to read the speech of Senator Simmons of North Carolina upon this subject in the United States Senate a few weeks ago, which shows that the South is beginning to wake up on this subject.

Above all things, perhaps, the country needs quiet and rest. The high degree of prosperity which preceded the present panic evoked infinite schemes for letting everybody have everything that they wanted.

Seriously, there has been too much activity in the name of reform. This simply confused and hindered real reform. Many of the results of these activities have brought confusion, rather than order and satisfaction, to whole classes of people and to whole industries, and we might almost say to the Nation.

It is not here intended to discourage good works, but it is intended to emphasize the idea that agitation is not all of reform or betterment work, and while in some cases agitation is advantageous and necessary, in too many cases the agitation only interferes with actual and lasting good.

Report of Secretary.

This association joined with the National Association of Cotton Manufacturers, the Southern Cotton Association and the Farmers' Union in entertaining about one hundred foreign spinners at the International Cotton Conference in Atlanta, Ga., last October. The influence of this meeting was world wide. The benefits to be derived from this and similar gatherings by producers and spinners are inestimable. Every effort should be exerted to bring about these international meetings as often as possible.

The committee on Cotton Exchanges at our last meeting was continued and will meet committees from the New Orleans and New York Cotton Exchanges during this convention. The importance of the exchanges and manufacturers arriving at satisfactory relations with each other cannot be over valued. Reports from these committees will be of intense interest to the members and to the cotton producing and cotton consuming world.

L. W. PARKER, ELECTED VICE-PRESIDENT.

In acceptance of an invitation from C. W. Macara, president of the International Federation of Cotton Spinners' and Manufacturers' Associations, a committee of ten members was appointed to attend the International Cotton Congress at Paris June 1 to 3.

The thanks of the association should be extended to the Richmond committees for their most hospitable entertainment of this convention.

Twelve hundred and thirty copies of the minutes of the Philadelphia convention have been printed and distributed at no cost to the association. The demand from libraries, colleges, etc., has become so great that together with the increase in mem-

bership necessitates the printing of a greater number of the books than heretofore.

Your officers have been very diligent in the service of the association, giving their own time and paying their expenses to attend meetings and do the work of their offices. Some plan should be agreed upon whereby the association should bear this expense instead of as at present the officer paying his own expenses.

The continued co-operation of each member is much needed by the officers in their efforts at making the association more truly representative of the industry. Our membership is now about eleven hundred; it should be two thousand. Each member is urged to secure at least one new member during the coming year.

We have received 75 new members. Lost by death, 5; by resignation, 20; leaving a net gain of 50, which makes the total membership of the association now 1,112.

Cotton Goods in the Orient.

BY JOHN FORD,
Secretary, American Asiatic Association, New York.

The virtual cessation of demand from the Chinese market for American cotton textiles during the last eighteen months is merely the natural result of the too confident optimism of 1905 as reflected in the suddenly inflated exports of that year and the first half of 1906. It is true that American trade has suffered a good deal more than the English from the overstocking of the market for cotton piece goods, but this is largely due to the fact that it was on the rapid recovery of the consuming markets in North China that the faith of the native dealers in the proportions of the future demand was based.

Of course Japanese competition has had its effect in producing a diminished demand for American cotton in Manchuria. A Japanese syndicate has been at work there, with all the advantages that cheap freights, use of Government money at 4 per cent., and a stable rate of exchange secured by the use of Japanese currency, could give it. According to a native Japanese newspaper the relative position of Japanese and American cottons in the Manchurian market has been reversed, and the product of Osaka mills had been for eight months coming into Southern Manchuria at the rate of a million and a half yards a month. Considering the productive capacity of Japan, this is a fairly large trade, but whether it represents a competition which is likely to keep on growing, belongs to the realm of conjecture.

On the other side of the account, there is some evidence that the markets of Southern and Central China, heretofore all but monopolized by English goods, are being invaded by the lighter weights of American cloth. There have been scattering sales, some of them of considerable amount, made in this field during the last eight years, but it is only recently that indications have been forthcoming of a permanent lodgment for American textiles having been effected there. According to a recent trade circular issued in Shanghai: "There is little doubt that Lancashire has now an active competitor in America for the finer qualities of grey shirtings; within the last month orders have been placed in America for which Lancashire manufacturers have not had an opportunity of quoting, and this at a time when many looms in Lancashire are reported to be idle. Throughout the long period of good trade, manufacturers in Lancashire have been independent of the demand from China which did not run on the style of makes suitable also for India; in the last few years American manufacturers have been cultivating the trade in finer goods; and as the pure goods made in the States are in many cases preferred to the Lancashire makes, a portion of that trade has already virtually been transferred. As in the case of drills and sheetings, if Lancashire wants to retain its old hold on the China trade it will now be necessary to make goods in imitation of established American makes."

How large a field may thus be presented for American enterprise is illustrated by the figures of English exports to China for the last three years. In 1905, there was exported from the United Kingdom to China and Hong Kong 370,474,000 yards of grey cotton piece goods and 231,585,700 yards of bleached, making 602,059,700 yards in all. For the same year there was exported from the United States 562,732,721 yards, of which but a small fraction were bleached goods. For 1906, the figures were for the United Kingdom, 245,386,600 yards of grey and 183,016,300 yards of bleached goods—428,402,900 yards in all, against 271,199,275 yards for the United States. For 1907 the figures were 181,941,100 yards of grey, and 152,728,400 yards of bleached goods—334,669,500 yards in all—for the United Kingdom against 39,443,859 yards for the United States. In other words, while our exports for 1907 have dwindled to 6.8 per cent. of those of 1905 and 14.2 per cent. of those of 1906, the English show a total for 1907 equal to 55.6 per cent. of those of 1905, and 78 per cent. of those of 1906. These figures afford the best possible demonstration that the great English markets of Central and Southern China have remained comparatively unaffected by the causes which have brought about the virtual of stagnation of trade in North China, to the obvious detriment of American exports but to the equal detriment of less than half of the English exports.

Just how far the beginning that has been made in substituting for the heavily sized product of Lancashire mills the pure goods represented by our finer qualities of grey shirtings, may hold out the promise of a greatly expanded trade, you are better able to judge than I can profess to be. If past experience may be taken as a guide there is every reason to be hopeful of the future. Twenty years ago our interest in the cotton piece goods trade with China was very slight, being, with the exception of one or two qualities of standard drills, confined to the export of surplus domestic goods which were, for the most part, of too high a standard of quality for general Chinese use. In the ten years between 1887 and 1897 the export to China of plain grey and white goods of American make increased from 1,874,274 pieces to 4,143,971 pieces, a gain of fully 121 per cent. While in 1887 our proportion of the entire trade was only 12.13 per cent., it had risen by 1897 to 15.02 per

cent. in value. Were it possible to cite our Chinese exports of 1905 as a normal trade, we should have the very satisfactory comparison of an advance in ten years from $2,775,000 to $33,514,918. But as we must take the average of the last three years to represent what may be called the normal dimensions of the trade, we must be content with the figure of $14,224,542. But a trade that shows an increase in ten years of 512 per cent. must at least be regarded as having in it great possibilities.

So far as the relations between the two countries are concerned, the United States was probably never in a better position to cultivate commercial relations with China on a basis of mutual respect and confidence. There certainly never has been a time in the history of the intercourse between the Chinese Empire and this Republic when there were so few matters of controversy requiring diplomatic treatment, or when each was so thoroughly impressed with the desirability of cultivating the friendship of the other. The proposed return of about half of the amount of the indemnity exacted after the Boxer troubles can hardly fail to impress the Chinese mind with a high respect for the American sense of justice. There can be no question that for the staple industry whose representatives I am addressing, the Chinese market contains enormous undeveloped possibilities. There are millions of dollars' worth of trade hanging on a turn of a fraction of a cent, and not a large fraction at that. It is like the few feet of elevation which changed, in historic times, the direction of the flow of our great continental river and gave a new turn to the development of North America. Just how the resistance of the obstinate fraction is to be overcome, you are much better able to judge than I am, and I cannot profess to teach you anything which you or your representatives do not know in regard to the economies which are possible in the handling of the great export trade in cotton textiles with China.

I can only emphasize the fact, strongly insisted upon by every representative whom China sends to these shores, and by every American who knows anything of the Chinese people, that all they demand is fair and equal treatment which they have not always received at our hands. Even today, with a much more liberal and discriminating administration of the Chinese exclusion acts, the exempt classes of Chinese still find reason to complain of being subjected to a humiliating ordeal of examination on visiting this country. Here is the natural place of education for the young Chinaman who will, but a few years hence, be in control of the destinies of their country. But, while knowing and appreciating that fact, the higher classes in China shrink from sending their sons to American schools and colleges, because of the absurd difficulties which our laws have placed in the way of their admission. The English are wiser in their generation than we are in this matter, and have formed an organization for the special purpose of facilitating the coming of Chinese students to their shores. Further, by way of familiarizing the Chinese with the United Kingdom and with the British Empire, a series of round-the-world tours have been arranged for, the first of which started last month from Hong Kong. If the itinerary of this party of Chinamen includes the United States, it will involve a departure from the published program which proposes a transit to England by way of Canada, returning by the Continent and Egypt. Arrangements have been made for a visit by the successive groups of Chinese tourists to the industrial centres and principal factories of Great Britain, and, like the movement to attract Chinese students to pursue their education in the United Kingdom, the scheme is frankly in the interests of British trade. Thus, while I have no suggestion to offer you in the technical details of your business, not even in regard to the proper packing of a bale of cotton domestics, I would respectfully invite your attention to the fact that other nations are engaged in making friends with their Chinese customers in ways that we seem disposed to neglect, or at least we have not yet thought of attempting.

Modern Methods of Merchandising.

BY S. R. LATSHAW,
Manager Textile Department, Ladies Home Journal.

A somewhat extended acquaintance with manufacturers of all lines throughout the United States has, after careful thought, led to a firm belief that from the standpoint of its scientific thoroughness, the textile industry in this country represents the highest development of manufacturing ability and executive capacity to be found anywhere.

It is not my purpose, nor does it lie within my province or ability, to say anything to you which would throw any new light on the making of textile fabrics. There have been great strides in the development of the mechanical end of your business, and the future will undoubtedly bring still greater improvements in this line.

It is upon an entirely new subject and a comparatively recent development in this industry that I wish to speak, which is the question of merchandising.

It will be generally conceded that the textile manufacturer is not a merchant. A lifetime devoted to producing the best goods for the least money has not included much time for the study of merchandising conditions. In the majority of cases you delegate the selling of your product through commission houses, who dispose of the product of your mills, as well as of other mills, on a percentage basis.

Too many manufacturers today produce a most excellent fabric, the result of years of development and the expenditure of fortunes in equipment, only to lose their identity as makers the moment the fabric leaves their warehouse. Too many manufacturers are at the mercy of the open market, subject to the slightest fluctuation in supply and in demand.

This condition, which is of course to be taken as general in its application, is recognized by many of you. I can now recognize the faces of a number of manufacturers, prominent in this field, who have told me that they regret and deplore this particular condition; and it is the effort to alter this situation that is bringing about a new era in the textile indutry.

Many of the leading manufacturers are today either undertaking or seriously considering a plan to remedy this condition. As a representative of this new factor coming into important consideration, I welcome an opportunity to tell you something of what we stand for, what we purpose, and of what we have done. It would be well, possibly, to take a concrete illustration, hoping that the conditions named and the changes effected may closely approximate your individual interests.

This manufacturer, of whom I speak, established his mill in 1870. It is excellently equipped and his product is one of the best known cotton fabrics in the trade. He sells through his commission house to some 125 jobbing houses, the greater percentage of whom had their quota of his output put up under their own private tickets and brands.

In good times, such as we had ten months ago, he could not supply the demand. In times of depression he was forced to curtail his product and slash his prices to meet competition on what must be, of course, a greatly decreased output. Because he sold a man a hundred cases each year for five years was no practical assurance that he could sell the same bill the coming year. He must, in every case, meet the market conditions or see the order go to his competitor.

His merchandise was being purchased and appreciated by millions of women throughout the country, who were in absolute ignorance of both the identity of his goods and his identity as a manufacturer. The conditions of trade were such that the margin of profit was very close. His business returned some nine or ten per cent. at the end of the year. He recognized that he had lost his birth-right, but he could see no practical, certain and business-like way to regain it.

It was my privilege to discuss this matter with him in detail and to suggest modern methods of merchandising to him.

At first the difficulties seemed insurmountable. There was no need to foster a desire for change in his mind. He met me on common ground in that matter. He wished to alter the conditions, if a practical, feasible plan could be evolved, and in this case it was so developed.

The first essential requisite was the adoption of a trade-mark to identify his product. In this case only a part of his total output was so identified. It is rarely advisable to trade-mark an entire line as an initial step in this sort of business development.

The question of the value, necessity and importance of the adoption of a trade-mark cannot be overestimated. There are today, as you know, thousands of trade-marks registered in the Patent Offices at Washington, which are little known and seldom seen; yet, they stand as monuments of a desire for identifications.

I cannot too strongly emphasize the value of the adoption of a trade-mark, mill brand or some certain means of identification. Whether you expect to exploit your fabrics or not, if they are worthy they should be identified.

One of the first things I found necessary when approaching this field was to secure a method for trade-marking cottons. In this I am happy to announce we have been successful. We have machines, newly on the market, running in a number of mills successfully, which fold, roll, measure and trade-mark at one operation. The cost is of course so microscopic as to be entirely negligible. The means of identifying your fabric have been created, ready for your use.

If your product is worthy, whether staple or a novelty, it should carry your stamp as a manufacturer.

When I talk to the man who makes standard, staple goods, he complains that he cannot rise above the present conditions because of the very nature of his output. "But my line is staple," he says. "There are a dozen similar brands on the market. Now if it were a novelty," he says, brightening up, "I would see my way clear, but not with a staple, every-day line."

Then I call on the man who makes seasonable novelties. "I have thought many times of just what you advocate, but I have a line which is dependent on style and the vogue of the times. Now if my line were staple, I would not wait a moment."

A staple sells year in and year out in every city, town and village the country over. The great successes in soaps, canned goods, collars, flour, condiments, shoes, silks, crackers, hardware and many similar lines have always been made on staples.

It surely isn't necessary to demonstrate the statement that the American public prefers to buy anything with the maker's name on it to the same thing unidentified.

Women are always more responsive to modern merchandising than men; yet you know that you always buy hats, gloves, shoes, collars, watches, cigars, etc., by brand names, and you know you often pay a premium for that same trade-mark that assures you that the manufacturer stands behind his goods.

In the last analysis, there are only two great necessities to insure merchandising success in your line. First, that the cottons are worthy of merit and value in return for the selling price; second, that a sufficient number of buyers recognize this fact.

This manufacturer, of whom I speak, had the product; the value was there, but the great buying public did not know it. He was, in consequence, at the mercy of the open market. It is true that the big buyers for the jobbing interests throughout the country recognized the worth and identity of this manufacturer's product, but the consumer had no means of so identifying it, and the manufacturer was the loser.

Under the present conditions, the establishment of a trade-marked line should be a process of evolution, not revolution. We trade-marked a portion of his goods and then exploited this line as newly identified. We told the consuming public—"the woman who buys"—about his goods, how they were made and wherein good value was always represented. For the first time we linked the satisfaction that the goods created with the name of the man to whom all credit was due—the manufacturer. The very fact that this manufacturer stood behind his goods by putting his name on them created a very widespread good-feeling toward the line.

There seems to be something inherently honest and sincere about the claims of any maker who puts his name and identity on his product. It created a very favorable first impression. It induced the woman of the country to make an initial purchase in order that she might see for herself whether our claims were justified. Of course, the milk in the cocoanut was, and always is, the intrinsic merit of the fabric.

Poor goods had always better go nameless, for the permanent success in merchandising under modern methods must always rest absolutely on the rock foundaton of value received.

A few years ago a certain line of hosiery was widely and skillfully exploited, new dealers and jobbers poured in; people clamored for the goods, and the manufacturers sold them a 12 1/2 cent standard stocking and charged a quarter.

The sales boomed and the mills ran night and day filling rush orders.

Then, as it seemed—overnight—the women discovered they had been paying too much and they quit buying. That changed that success into a failure—a failure fore-ordained to any merchandising plan that is not based on giving value received.

We approached the jobber and explained our plans to him in detail. We assured him that we would increase his volume of sales at a decreased cost, and in the majority of cases we secured his enthusiastic co-operation. The jobber is always in favor of doing the biggest business at the least cost. Anything which will tend to facilitate this end will be welcomed by him, and so it was in this case.

Those few jobbers, who were inclined to look askance at anything new, were compelled by the insistent demands of their customers (the retailers) to enlist in this campaign.

We next addressed our message to 20,000 retailers of the country. Although in this case our manufacturer did not sell the retailer, except through the jobber. While in the majority of cases it is inadvisable to sell the retailer, it is always advisable to keep him in close touch with you, enlist his enthusiasm and his active co-operation. We told the retailer in detail specifically what we were doing and what we would do toward exploiting this fabric and this trade-mark.

Let me tell you, gentlemen, there is no one today who knows better or is more responsive to modern methods of merchandising than the retailer. There is no one more anxious to follow the course of least resistance, or who is more anxious to carry small stocks that sell readily and are in constant demand by the consuming public, than the retailer.

Our principal message, of course, was delivered to the supreme court of all, and that is the woman who buys your goods over the counter, who puts them to the use for which they are intended, and watches and knows their merits day by day.

This particular manufacturer commenced modern methods of merchandising seven years ago. At that time his trade-marked line sold to the amount of six hundred thousand dollars for the first year. During the last three years the increase has been nearly a million a year, and this year the sales are close to eight million dollars.

Throughout the recent period of depression there has not been an appreciable decrease in the sales. Every man handling this line, from the great jobbing houses to the smallest retailer in a far-off town, is making money and is happy in the success and profits that are attendant on a line which is self-selling—self-selling because the consuming public demands it.

Modern methods of merchandising will sell the output of your mills at a decreased distributing expense, for increased volume means decreased cost; it will make your name, your trade-mark and your fabrics known from one end of the land to the other—in a word, it will standardize your product. If your goods have merit they will not go unheralded and unknown; on the contrary, every consumer that you have satisfied with the intrinsic worth and value of your goods becomes your partisan. You will very greatly increase the continuity of your sales, and while, of course, the conditions of the times will affect your output, the average level will continue through any ordinary flurry with little variation.

In the recent period of depression the standardized fabrics fell off very little when compared with the curtailment of 30 and 40 per cent. in the general field. Buyers ordered more freely on those lines that they knew were in demand.

Modern methods of merchandising have long since passed through the experimental stage. The greatest successes in every other commercial line can be traced directly to this source, and today, almost for the first time, the textile industry is turning its attention seriously to a consideration of this subject. The ways and means for reaching this end and the machinery for its accomplishment have been thoroughly tested during the last fifteen years. The subject in detail is, of course, too varied to be discussed within the limits of my time before you. I would state, however, that they are at your disposal, and that you owe it to yourself to carefully investigate what has been done for others in all lines of commercial life, and also for the increasing number of firms in your own field who have made great success by these methods.

You can make your brand a household by-word in every home in the land.

You can create a demand for your fabric in every city and every hamlet in the Union.

You can start this wave up through the twenty thousand retailers—through the jobbing interests—until it centers on your commission house.

You can entrench yourself behind the bulwark of your trade-mark.

You can so change conditions that instead of your line being incidental with the jobber, the jobber will know he is incidental to your line.

You can market an increased output with facility, for it will be "self-selling."

In short, you can standardize your line with all, that means to you, modern methods of merchandising.

Textile Schools.

BY THOMAS NELSON,
Director Textile Department A. & M. College, Raleigh, N. C.

A textile student should learn thoroughly the processes through which the cotton passes in its

transition from the raw material to the finished product. He should also learn the mechanisms of the different parts of the machinery with which he may be brought in contact in his profession. fession.

If a young man would keep abreast of his fellows he must have a skilful and systematic training. This is true of any branch of industry. It is especially true in the study of textiles. Take for example a young man who expects to make the mill business his profession. He enters a textile school and can devote his whole time to the study of textiles, or if he so desires, can devote a certain portion of his time to freehand drawing, wood work, forge work, lathe work in the machine shop, electricity, steam and steam engines, boilers, etc., all of which tend to make him a well-rounded mill man.

The student is guided in his studies systematically so as to get the best results from his work. He is also taught to observe results and if he receives the proper training he will be taught that the very smallest, minutest detail is none too small for his attention, for as you know, the very small minute things which singly appear to be nothing, but collectively assume a very different aspect, are the cause of profit or loss; and it is only the trained eye and the experienced man who can detect these things and remedy them.

Take another example. A young man is working in the mill. He is bright, energetic and ambitious, but is limited practically to the machinery on which he is working. Almost his whole time is occupied during the day in tending the machinery, consequently he makes little progress in his studies. He cannot take a machine to pieces to examine it, for a mill is not a philanthropic institution; neither is it a textile school, and the result is: it takes him quite a time to master thoroughly the details. And on it goes. He may be put on some other machine and eventually master that, and so on until the young man, after many years of patient study and hard work will find himself near the top of the ladder. All honor to these stalwarts who, by their perseverance and energy, have advanced from the bottom of the ladder to the top. But see the cost. Notice the loss of time. If that same young man could have had the advantage of a systematic training, what a considerable amount of time could have been saved. Truly, knowledge is economy and time is money.

There are many bright young men about every mill who desire to learn the problems involved in cotton manufacturing, but whose ambitions become dwarfed because of their inability to find anyone to assist them, and also because their sphere is very limited. Would it not be advantageous to manufacturers to select a few of these young men and send them to a textile school where they can receive textile training?

We do not claim that we can turn out these men or any of our students as full-fledged, experienced superintendents, but we do claim that a young man who has had a systematic training, who has been taught to reason the why and the wherefore, will be able to grasp and more readily comprehend the difficulties as they occur than will one who has not had this textile training. A young man, however, can have the learning of an Aristotle, but if he is lacking in tact, adaptability and practical experience, he will be found wanting. Knowing this and knowing also that it is an impossibility to implant these things in a student, we do what is possible to be done under the circumstances, viz: develop and build upon that which a student already possesses. The brighter and more intelligent the student, the better will be the man that is turned out.

It therefore resolves itself to this condition. A textile student who has had a systematic course of training and is intelligent and bright, will very soon adapt himself to circumstances after beginning his practical career in the mill.

We all know that a vast amount of cotton, silk, woolen and worsted fabrics are imported into this country every year. Not only that, but many of the productions of these foreign mills are used as samples to be duplicated by mills in this country. This is not as it should be. Our manufacturers should not be followers but ought to be leaders. Why is it that the artistic skill in imported goods is so developed that there is a ready demand for them often in preference to domestic goods? I believe that the extensiveness and thoroughness of the textile training in the countries from which these goods are imported is the foundation for this success.

The origination of a design to a great extent is largely theoretical, but if the design is to be used practically, the originator should have a knowledge of the intersecting of threads, the effect different weaves will give in a fabric and a clear conception of the effect that will be produced in the loom; especially if colored threads are introduced into the fabric.

If imported goods have the most pleasing colors and the best designs there will certainly be a demand for these goods. There is always a demand for a good article and that is one reason imported goods are of the best quality. Another reason is that it would cost as much to ship an inferior grade of goods to this country as it does to ship a superior grade, hence we find that there is practically no competition from outside sources in poor and medium classes of goods. It must be inferred, therefore, that it is more profitable to make the best grade of goods.

Now the question is: How can we, as a manufacturing nation, meet this competition in the best quality of fabrics? The only real answer that can be given to this question is that the productions of our mills must at least equal the imported materials in construction, coloring and finish.

There is another point which I would draw your attention to, as manufacturers, and that is the study of color. We are all aware of the vast importance and relationship this subject has to many classes of manufactured goods. Knowing this, I believe that this subject should be made compulsory in all our graded and high schools. If this subject was made compulsory, and was taught with a view to its practical application to the textile industry, it would prove of inestimable value. That it can be taught practically I have not the slightest doubt. If our youths, boys and girls can be taught by a study of color in the school to observe and note the

colorings of the fabrics which they wear and which are worn by others around them, we will have made another great step forward. If no other value than a finer standard for taste in dress has been created, the effort will have been worth while.

But there is another side to the question. Many of these youths having had their thoughts directed to a study of color and its application to fabrics, will be desirous of still further continuing that study. The educational institution these students would attend for the continuation of this very practical subject would undoubtedly be the textile school. They will there be taught the operation and construction of the various machines used in the manipulation of cotton or wool from its raw state to the finished product; the construction of fabrics, and also the relation and practical application of color to fabrics. The preparatory course, which the student will have received, will prove of great value to him.

The value of this study of color in these schools will at once be seen, for not only will their minds be turned to the subject of colors and coloring in fabrics, but a nucleus will be made on which to draw for designers. The value of such teaching? In my mind it is inestimable. With such a foundation to build upon, we will then have no fear that goods manufactured abroad will be more attractive than ours, will have more pleasing colors or that they will be selected in preference to domestic manufactures.

In concluding this paper I wish to say a few words directly to you manufacturers. Textile schools in the past have not received from you the cordial co-operation and help you are so qualified to give. There ought to be a direct relation between the textile school and the mill. The manufacturers ought to freely advise with the management of the school for the upbuilding of it, remembering that the students in such schools are being trained for the mills.

The work in a textile school is as practical as it is possible to make it without eliminating the theory. At the school with which I am connected the studies and work comprise, not only those which bear directly on textile work, but also those which go to make a well-rounded man, such as forge work, wood work, machine shop, steam and steam boilers and a general education in English and mathematics, thereby emphasizing the development of the man.

I appeal to you as manufacturers and practical mill men to hold out a helping hand and do your share in helping to make textile schools what they ought to be.

Fine Cotton Spinning in the United States.

BY ARNOLD B. SANFORD,
President American Cotton Yarn Exchange.

The obstacles to the successful manufacturing of fine combed yarns in the South have been unskilled labor and climatic conditions. The latter has been solved by the scientific processes of humidification, so that the atmospheric conditions can now be kept under most excellent control, and the desired humidity obtained which is vitally necessary for the production of fine yarns.

The other obstacle—unskilled labor—still remains a very serious problem for our Southern manufacturers to confront, and from my own close personal investigation I feel safe in saying that there are very few locations in the Southern States where skilled labor can be had. This will be the chief trouble and hindrance for some years to come.

The New England States, as you will observe, have been many years in reaching their present condition in fine cotton manufacturing. Prior to the year 1880 there was only a very limited quantity of fine cotton yarns above 40s produced in the United States. The bulk of the supply was imported from England. There were a few mills that were spinning fine counts, but principally for their own consumption and weaving, among them being the Lonsdale Company of Rhode Island, incorporated in 1834; the Wamsutta Mills, of New Bedford, 1848; and two concerns making fine yarns for thread—the Hadley Company of Holyoke, Mass., 1865; and the J. & P. Coats Company of Rhode Island, 1868.

The first corporations to enter the field on a large scale to furnish yarns for domestic consumers were the Arlington Mills of Lawrence, Mass., and the Globe Yarn Mills, of Fall River, each building a mill for this purpose in 1881. Success following the venture, the Globe Mills, in 1887, equipped one of the finest and largest mills of that time, of 40,000 spindles, especially for the fine counts from 60s to 100s.

Yarn No. 100 at that time was being imported and sold at $1.50 per pound, for cops. Inside of twelve months after the Globe had begun to put its production upon the market, the price fell to $1.10 per pound, showing that home competition was in favor of the domestic consumer of 40 cents per pound, and proving conclusively that protection to our home industries was at that time and is today a direct benefit to domestic users.

For the year 1900, the United States Census gives the total production of yarns, 41s and finer, as manufactured in the Southern States, 886,200 lbs. which, if we figure on the basis of 50s, 7/10 of a pound per spindle per week, would require about 25,000 spindles to produce, and by conservative estimate not over 2,500,000 spindles all told for all the states.

Statistics from the same reliable source give for the year ending June, 1905, for the Southern States, 17,858,453 lbs., which requires on the same basis as above 500,000 spindles to produce, showing the remarkable increase from 1900 to 1905. Of this total a conservative estimate would show that not over 25 per cent. of this production was combed quality.

For the year ending June, 1905, the Census returns gave the total of yarns made, No. 41s and finer, as 101,233,957 lbs. for the New England States alone, which would take to produce, based on 70s, 4/10 lb. per spindle weekly, an aggregate of 5,500,000 spindles. It is interesting to note, in this connection, that in the city of New Bedford, Mass., out of a total of 2,000,000 spindles, fully 1,600,000 are on fine counts.

There is ample room for expansion in the United States for the fine cotton spinning industry, both in cotton goods and yarns, when one takes into consideration the large importations

of cotton goods as shown by the following figures. For the year ending June, 1907, the importations were $75,948,134

Cotton fabrics imports show	$13,008,067
Cotton yarns and threads imports show	3,583,627
Other threads, crochet and embroidery cottons on spools and reels, and all others not classified	4,913,404
Knit goods made from cotton yarns	8,671,848
Lace curtains, laces and embroideries, edgings, insertions, etc.	42,000,000
Clothing ready-made, wearing apparel not included in knitted goods	3,771,188
Total	$75,948,134

From the above it will be seen that about $21,500,000 can be placed to the importations of fine cotton cloths, cotton yarns, threads and other goods. For the year ending June, 1905, the total production of fine cotton yarns and goods No. 41s and above is given by the U. S. Census Report as 123,745,450 lbs., which would represent in yarns a value of about $60,000,000, requiring fully 6,500,000 spindles for their production. So you will see if we import $21,500,000 worth of these cotton cloths and yarns for our home consumption, then we would require, if we could have all of this trade for our domestic spinners, fully an increase of 33 1/3 per cent. in spinning spindles to meet the demand of our home consumers; consequently at the present time there is room in this country for a large increase in fine spinning, an increase that should not stop until we can take care of the demands for our own consumption in the United States.

For the year 1900 the production on fine numbers was about as follows:

New England Mills produced about 93 per cent. of all the yarns of that class.

Middle States produced about 6 per cent. of all the yarns of that class.

Southern States produced barely 1 per cent., and all from the single state of North Carolina.

The report for the year ending 1905 shows fine spinning in the Southern States now producing 14 per cent. of the total quantity produced in the United States. Yet these facts do not prove that the fine spinning of the country is about to be transferred to the South, for the increase in the single state of Massachusetts, alone, from 1900 to 1905 inclusive, exceeded the entire amount reported from the Southern States and the increase in the New England States as a whole is less than twice the entire production of the Southern States.

I wish to say in conclusion to my Southern friends, for their encouragement, while the obstacles have been and are today serious to overcome for high-grade fine spinning, yet you have made remarkable progress during the past ten years, and I firmly believe you will in another ten years surmount all difficulties and the Southern States become large producers of fine cotton yarns; competing successfully with New England States for quality and fineness of spinning.

What the South has to Gain from Yarn Testing.

BY ROBERT J. HOGUET,
President of the New York Silk Conditioning Works, New York.

Among the most prominent features of modern industrial life is the spirit of research, which permeates its various branches; our investigations (even when theoretical in their character) being based on ascertained facts. Our reasoning is as thoroughly inductive as that of the philosophers identified with that form of argument. To establish with precision actual conditions at any given point, is the object of all tests, and particularly of those connected with textiles.

TESTING FOR MOISTURE.

In addressing a body so thoroughly representative of the great cotton industry, it is hardly necessary for me to insist upon the importance of textile materials, whether in the raw or semi-manufactured condition, being in all respects up to the necessary standard, and particularly of the weight paid for not including more than the normal amount of moisture. This last named proportion has been ascertained to be for cotton 8 1/2 per cent. of the actual dry weight. The latter is determined by drying in our special appliances until no more moisture remains in the material; this fact being determined and recorded by mechanism of a delicate and thoroughly reliable character. To the weight thus ascertained there is added the normal 8 1/2 per cent.; the result being the "conditioned" or correct weight under natural and normal conditions.

This is one of the tests our Conditioning Works have been for 28 years applying to both raw silk and silk yarn, in accordance with the old established European practice. Similar tests have likewise been applied in Europe to other textiles, the application of which tests to cotton, I am here to propose and defend, as the only effective way of remedying the complaints of excessive moisture, which have, I understand, of late years become more frequent.

MOISTURE IN RAW COTTON.

That the scientific methods employed by our Laboratory for determining moisture can be successfully applied to raw cotton, is shown by the fact that in the report of the French Cotton Spinners to the Congress held at Vienna last year, the establishment of special Conditioning or Testing Houses in connection with the various cotton exchanges, was officially demanded; not only on account of the theoretical merits of the system, but in view of it having been already successfully applied to the testing of yarns in the principal European textile centres. These testing houses would be entrusted with the delicate operations necessary for ascertaining the moisture in cotton, and on their reports, Chambers of Arbitration would then take up the question of the allowances to be made. In this demand of the French cotton spinners, they are, however, asking for nothing more than already exists in this country, in the shape of the facilities afforded by the laboratory of our Conditioning Works.

MOISTURE IN COTTON YARNS.

Apart from this "unseen loss" by reason of the excessive moisture in raw cotton, there is another equally important question, possibly more easy of solution: that of the moisture in cotton yarns. I need hardly say that while this question is primarily one for those who sell and buy yarns, our tests are equally valuable to those manufacturers who spin their own yarns and wish to ascertain with mathematical exactness the exact percentage of moisture at any given stage. Our tests are made on samples forwarded us in air-tight receptacles; experience showing us that samples thus sent reach us in practically the same condition as that in which they are despatched from the South, or even from Europe.

The services we can render spinners by our tests, are not, however, confined to the security afforded them by reliable and impartial reports as to the moisture, but include the determination of the count, twist, strength and elasticity of yarn samples submitted to us as experts.

I feel sure that disputes between spinners and their customers can often be adjusted in a mutually satisfactory manner, when the actual facts are established by an impartial authority. This work we have, for 28 years, been doing for the silk trade. I am convinced we can do equally as well for any cotton spinners who may honor us by consulting us on questions which our tests can solve.

BENEFITS OF YARN TESTING.

Our aim has been and will always be to place at the disposal of American manufacturers the technical and chemical advantages enjoyed by their European competitors, with a view to determining with mathematical precision the exact qualities of their products and thus inspiring buyers with the fullest confidence. Our tests are, however, no secret process. Our friends, if they provide themselves with the needed equipment, can obtain the same results by the comparison of their product with our standards.

We have no preconceived notions to impose on manufacturers in our tests, our only object being, as I have said, to show the actual existing conditions, upon which those interested may base their action under circumstances which may call for incontestable "findings of fact." These findings we are prepared to establish and only ask the privilege of doing so for the information and guidance of those who may call for our services.

The Advantages and Disadvantages of Bleaching and Finishing in the South.

BY JNO. W. ARRINGTON,
President Union Bleaching and Finishing Co., Greenville, S. C.

Until something like the last fifteen years practically the entire product of Southern looms consisted of coarse, heavy fabrics, a large percentage of them for export and only a small proportion of them being finished. When convertible goods of print cloth yarns and finer became a sufficient factor of Southern production to be appreciable the need was felt for finishing them where made and it was not long before this want was supplied.

Our company is now the youngest in operation of the several which have been launched. The non-success of some of our predecessors is a fact well known to the trade, which fact we think may be attributed to two causes: the difficulty of securing and maintaining competent management on the practical end of the business and the further fact that they may have tried to accomplish in their infancy a large variety and high grade of work such as had taken their Eastern competitors a generation or more to reach. As the South was content for a long time to make only coarse and heavy fabrics, so has been the policy of our company to attempt at first only the more simple and easy classes of work in our line. The argument most frequently heard in the past against the South as a place for finishing is that the water is not good. Such argument is without foundation, in fact. The water generally throughout the South is all right, I believe, but certainly it is in that mountain section of it with which I am familiar.

When cotton manufacturing was in its infancy in the South it was found necessary to import from New England men who had expert practical knowledge of manufacturing, by whom our untrained help could be taught. In this business we have found a similar course to be necessary, our superintendents and men in charge of departments having all come from the best New England plants, each of them an expert in his line. Our own people are intelligent and willing workers. It is not hard to understand, therefore, that such a combination should produce results that are most gratifying.

The first essential to the success of such a business is to obtain the confidence of the converter that the quality of the work will be satisfactory. To use a current slang these converters are "From Missouri" and have to be shown. Probably every finishing works, no matter where located, has to go through this process of proving their right to exist, which process might well be termed the formative period. During such a period almost all shipments are of small sample lots, involving a disproportionate cost per yard of finishing. Fortunately for our company we have pretty well passed through that period and now have among our clients many of the largest and most critical converters in the country. By far the greatest advantage to the South in this line is the matter of location, meaning thereby the question of favorable freight arrangements obtainable on grey goods purchases, which favorable arrangements are not available if the goods are shipped to Eastern finishing works.

Before there was a bleachery in the South and every yard of the goods had to go to New England to be finished, it was necessary for the Southern mill to deliver its grey goods to Eastern bleachery points in order to compete with the Eastern mill located right at the doors of the bleachery. They would as soon allow that freight to the buyer as to pay it to the transportation companies. To illustrate clearly how this works: The company I represent is located at a point where there are within a radius of fifty miles upward of two million spindles, most of which are making convertible goods. The freight rate from the territory mentioned to New York is forty-nine

cents per hundred and to most Eastern bleachery points is fifty-three cents. We absorb the freight to our works on the grey goods, which leaves the buyer with freight allowance enough to land the finished goods in Philadelphia or New York.

From this it is apparent that we are on an equal footing with all the others as to delivery of finished goods in New York. When it comes to distributing the finished goods in the South, Southwest and West, we have a distinct advantage as we will undertake to show by the following figures, using the City of Greenville, South Carolina, as a basis, as only from that point are we familiar with all inward and outward freight rates. In the first column below is shown the rate of fifty-three cents to Eastern Bleachery points plus the rate from a number of the most prominent of such bleachery points to the several destinations shown. This column, in other words, shows total expense for transportation added to the cost of the goods when reaching destination from the South by the way of Eastern bleacheries.

The second column shows the rates from Greenville, South Carolina, to the several points, and the third column the difference between the two or the actual saving in freights, in cents per hundred pounds, in favor of Greenville.

Atlanta, Ga.	1.27	34	93
Birmingham, Ala.	1.32	43	89
Nashville, Tenn.	1.15	46	69
Memphis, Tenn.	1.25	55	70
New Orleans, La.	1.16	55	61
Galveston, Tex.	1.43	90	53
Chicago, Ill.	1.05	65	40
Cincinnati, Ohio	.98	59	39
St. Louis, Mo.	1.14	60	54
Omaha, Neb.	1.46	95	51
St. Paul, Minn.	1.30	92	38
Des Moines, Ia.	1.40	95	45
Milwaukee, Wis.	1.16	68	48
St. Joseph, Mo.	1.46	95	51
Kansas City, Mo.	1.46	95	51
Troy, N. Y.	.75	54	21

Where there is a rail and water rate lower than the all rail, we have used the lower rate in making up this table. Having claimed an advantage to points in the South, Southwest and West, we have grouped in the cities named in that manner.

For instance, the four points first named are Southern and show an advantage to Greenville as compared with shipping the same goods to Eastern points for finishing, ranging from 69 to 93 cents per hundred pounds. The next two points being New Orleans and Galveston, which we would call Southwest, show an advantage to Greenville of 61 and 53 cents, respectively, notwithstanding the fact that they are important ports. The next nine points we would call the West and show an advantage ranging from 38 cents in the case of St. Paul to 54 cents per hundred in that of St. Louis. Last of all we include Troy, N. Y., which is probably the largest consuming point in the country of plain bleached goods. To this point we show an advantage of 21 cents per hundred pounds. The cities we have used for illustration were taken at random and are considered as fairly representing conditions that prevail at many hundreds of points in these several sections.

Probably the advantages shown can be better realized and more readily appreciated if figured out per yard, as that is the way the goods are bought and sold. Using as a basis wide print cloth weighing 5.15 yards per pound and using among the Southern, Southwestern and Western points named only the two showing respectively the least and greatest advantage, we find that 38 cents per hundred at St. Paul figures a little above 7/100 of a cent or more than 1/16 of a cent per yard, while Atlanta's 93 cents figures above 18/100, or practically 3/16 of a cent per yard.

Stated in percentages and using five cents per yard as probably a fair average grey price for the construction mentioned, the two points named show a saving respectively of 1.47 and 3.60 per cent. The terms on print cloths are well known to be net ten days. At the same price would not the shrewd buyer give his business to the man who offered him on all his purchases terms of even 1 per cent. ten days? To this question there can be only one answer.

A few years ago when labor legislation was unknown in the South and when manufacturing had not developed so as to cause any scarcity of labor, the hours of work were far longer and the rate of pay smaller in the Southern cotton mills than in those of the East, which gave the Southern mills a so much lower cost as to threaten the industry in New England on coarse yarns and heavy fabrics. The result of this difference was to drive New England into changing over as rapidly as possible to finer counts of yarn, or where that was impracticable with old established plants, to force them into building additional large and up-to-date plants in the South, which course a number of them followed. As to hours of work and rate of pay, conditions in most of the Southern States have been undergoing a change in the last few years to a greater extent than in New England, so that today while there may still be some advantage to the Southern mill it is so slight as to be said not to exist and is probably fully offset by the greater skill of the Eastern operative, due to longer training. We take the ground, however, that such changes in conditions do not apply to finishing works for the reason that our advantage is one of location, of which we cannot be deprived and which cannot be altered. In short, it will always be to the benefit of the owner of the goods to finish them where made, rather than to haul them a thousand miles or more to finish, and then a still greater distance to final distination.

So far as our company is concerned we are glad to have these advantages known as well by others in this line as by the converter. Competition if it might be so called, would be welcomed by us rather than discouraged, on the ground that the more there are of such plants the more business will be attracted to the section, of which each ought to get its share, and for the further reason that there would be in process of training a larger number of our own people for positions of management as well as for skilled operatives.

Having devoted this much time to setting forth the advantages of the South we were about to overlook the fact that we were asked also to comment on its disadvantages. I am afraid the wrong man has been selected for that task because from

our standpoint there are apparently none. Seriously, however, there occur to me only two features that might be considered possible handicaps, one being the remoteness from the supply of most drugs and chemicals, and the other the fact that we are not closer to New York, though less than twenty-four hours distant. The former of these is easily overcome by carrying in stock a few hundred or a few thousand dollars more of these supplies than would be otherwise necessary, while the other objection is met by maintaining a New York office in charge of a capable man, with whom we are in close touch by wire and telephone.

We do not feel that we are indulging in an idle dream when we think that the day is not very far distant when a considerable portion of the South's product of convertible goods will be finished where made.

The inevitable tendency of business is to bring each finished product as close as possible to its raw material. For that reason the flour mills are in Minneapolis, the furniture factories and largest paper mills in the heart of the Western forests, and so must cotton piece goods eventually be finished on a large scale where the cotton is grown, ginned, spun and woven.

A Misnomer.

BY WM. H. HARRIS,
Manager Carhardt Cotton Mills, Bellevue Mills Co.

Very probably we have all at times heard the expression—"a cotton mill in a cotton field," as applied to many of our Southern cotton mills. It will be my purpose to try and show that in truth the expression is a misnomer, and furthermore, that we Southern cotton manufacturers are not taking full advantage of the one great opportunity offered by the South to the cotton spinner. I doubt in my own mind if the cotton mills in the Southern States today have a single decided advantage over those of England or New England. In fact, I have at times thought that at this particular period, or stage of development of the industry, the world over, England has the balance of power in her favor. Certain is it that she has two distinct advantages, namely: low initial cost of plant construction and equipment and more efficient labor at a lower price. The subject of advantage in securing raw material is yet a mooted question, and one laden with many good arguments on either side. It would appear that in some cases the mere presence of an abundant supply of raw material at many Southern mill doors has worked to the detriment of the profit sheet; in view of the fact that such a situation is inclined to cause the manager to form an "opinion" of the general market trend, based on local conditions. We all know that an "opinion" of the cotton market when we have goods sold and cotton to buy is sometimes a very dangerous thing to possess. The Englishman is not bewitched by these local conditions, and we often awake to the realization of the fact that he has secured his supply of better cotton at a better price and our one great supposed advantage in raw material is lost in the awakening. Such instances would seem to show that "a cotton mill in a cotton field," as exist today, in name only, and with the implied advantage of no real benefit to the manufacturer.

Let us see for comparison what the relative costs are in manufacturing raw cotton into goods. Take, for example, an average size mill on medium brown cotton sheetings or drills, which includes a great portion of our mills, and the division of total cost will be about as given below. The items vary, of course, with conditions and circumstances, but for our purpose here the following will be about right, 100 per cent. representing total cost:—

A.	Productive and non-productive labor—total labor cost	25 per cent.
B.	Starch, supplies, oils, light, heat, power, repairs, etc.—total milling cost	10 per cent.
C.	Salaries, insurance, taxes, interest, depreciation, general and incidental expenses, etc.—total fixed cost	15 per cent.
D.	Cotton, including waste—total raw material	50 per cent.
	Total cost to manufacture	100 per cent.

The items, A, B and C, which represent roughly about one-half of the total cost of producing cotton cloth, are practically fixed. While it is true that item C embraces what are generally termed "fixed charges," yet in a relative sense items A and B are also fixed within narrow limits.

How different, though, is the last item of cost, D—raw material. It representing alone the other one-half of the total cost, a fluctuation in the price of cotton over night can often offset the advantage gained by the economic handling of all the first three items combined. Herein lies the cause, in my opinion, of more mill failures than all others that might be suggested. Then again we at times see old mills, of the most antiquated equipment and plant arrangements, outstrip in profit-showing its most modern neighbor, solely on account of luck or foresight, as the case may be, in purchasing raw material. Strike the market wrong, which is more often the case, they go to the wall very rapidly on account of the physical handicap.

So long as a mill is properly organized, with ample working capital, properly equipped with modern machinery, apparatus and properly managed, the cost of the first three items are as stated practically fixed. Now the South offers opportunities for fixing the cost of raw material within narrow limits that are not found in any other of the great cotton manufacturing sections of the world: yet we are not making the best of our only real advantage over foreign competition. Once fix the price of raw material and the Southern mill man could foretell very closely what a certain piece of cloth would cost to manufacture next year or the year after if necessary. Do this and our manufacturers of the Southern States could speak prophetically of spinning the greater portion of our crop with a surer chance of fulfillment.

How then is the price of our raw material to be fixed? The answer in my opinion is to, in reality, put "a cotton mill in a cotton field." That is, to have farming and spinning corporations raise their own seed cotton, as well as manufacture same into goods hard by, with the cotton gin as the first process in the mill. Right here I will say

A GROUP OF MEMBERS AND GUESTS AT THE AMERICAN COTTON MANUFACTURERS' CONVENTION AT RICHMOND.

that primarily this entire discussion applies only to the smaller mills of say 10,000 spindles and under, owing to the unwieldy size of a farm necessary to raise sufficient cotton for the larger mills. However, with the advent of more economic agricultural developments, such as a practical cotton picking machine and greater yields per acre, I do not doubt that in time large mills will be operated in this manner. Undoubtedly the day will come when an arrangement for raising its own cotton will be the only excuse. I might say for a very small mill, so many of which we see in the South today, to try and compete successfully with the modern trend for larger mills. It would appear that for many years to come the small mill is to be the one to take advantage of this idea. Therefore looking at the question from this viewpoint, we will probably retain the small mill for a long while and in an increasing number.

Assuming then that a mill corporation did own land on which to raise sufficient seed cotton for its spinning purposes, and that the farm was operated in the same business-like manner as the mill, I will attempt to point out some of the advantages to be derived from this arrangement as I see them.

First, this combination suggests many economies that could be instituted, viewed solely from an agricultural standpoint. The farming end of the organization being superintended by a competent man, the selection of seed, scientific fertilization and cultivation of the soil, harvesting of crop, etc., could be properly looked after, and subsequently the cost of raising cotton could be substantially reduced under the present accepted idea. After counting the value of by-products, such as seed, feed stuff, etc., it would very probably be safe to say that a mill raising its own cotton should be able to fix the price of lint turned out at somewhere around seven cents per pound from year to year, the only exception being in those years of bad seasons, but I could hardly be expected to attempt here a thesis on the control of the elements. Even should the crop fail, or turn out short, there is no reason why seed cotton should not be purchased with good results. To be on the safe side, considering bad seasons, a fixed price of ten cents per pound would be sufficient to place such a mill far ahead in the race for commercial supremacy. While this material reduction in the price of cotton is the greatest gain to be suggested, yet there are many others of much import.

The cotton could be properly aged after picking and before ginning, thus gaining much additional substance from the seed; resulting in better staple as to strength and general spinning value. It is a well-known fact that much of our cotton is today ginned too green and wet. The seed cotton could be well cleaned from trash, leaf and dirt by fans before passing to the gin, thus eliminating the necessity of much of our present picker systems; as the gin would have a lap attachment to pass the cotton direct to the card or one finisher machine, where the work would also be much lighter. A large portion of our present preparatory machinery has to undo, as it were, what the saw-gin does in the way of scrambling leaf with fiber. In this connection some of the recently developed combing and roller gins would be of the greatest efficiency and benefit. In addition to the bagging, ties and baling expense being overcome, the cotton direct from the gin would be in shape to be more easily carded than that from the compressed bale after having been artificially "opened" by modern picker systems. And last, but not least, the idea of eliminating the "wet bottom" bale should be cherished by every man who has anything to do with a cotton mill.

Aside from the strictly mechanical advantages mentioned above, it is possible that the ownership of a cotton farm would solve for a mill certain perplexing labor problems. If nothing more, the occasional shifting of operatives from the mill to the farm, and vice versa, would be conducive to general health and contentment.

It would be idle talk to say that so radical a change as the one suggested in the manner of handling our raw material could be affected without meeting serious difficulties. However, I feel sure that none are more unsurmountable than similar conditions that have obtained in other industries and finally been overcome by persistency. The only large problem to be solved is the proper construction of a warehouse to store in a suitable manner sufficient seed cotton to supply the mill after harvesting season. This is a matter on which I have given some thought and I do not believe it is impractical by any means; but in the absence of actual experience along this line nothing conclusive can be shown.

Following is a list of the new members elected:

ACTIVE.

American Spinning Co., Greenville, S. C.

John Gregson, superintendent German-American Co., Draper, N. C.

L. R. Hagood, secretary and treasurer Lula Mfg. Co., King's Mountain, N. C.

C. W. Johnston, president Highland Park Mfg. Co., Brown Mfg. Co. (Anchor Mills, Charlotte, N. C.).

E. H. Johnston, president Highland Park Mfg. Co., Rock Hill, S. C.

George Lunz, secretary and treasurer Royall Nag & Yarn Mfg. Co., Charleston, S. C.

A. H. McCarrel, superintendent Seminole Mfg. Co. (Clearwater, S. C.), Aiken Mfg. Co., Bath, S. C.

S. M. McNeel, president Tavora Cotton Mills, Yorkville, S. C.

M. G. Stone, general superintendent Pacolet Mfg. Co., Spartanburg, S. C.

E. C. Dwelle, secretary and assistant treasurer Chadwick-Hoskins Co., Charlotte, N. C.

W. H. Gray, president and treasurer W. S. Gray Cotton Mills, Woodruff, S. C.

W. L. London, secretary and treasurer J. M. Odell Mfg. Co., Pittsboro, N. C.

Elias Richards, superintendent Lynchburg Cotton Mill Co., 1116 Wise St., Lynchburg, Va.

R. P. Roberts, treasurer Cherokee Falls Mfg. Co., Cherokee Falls, S. C.

R. L. Tate, manager Mecklenburg Mfg. Co., Charlotte, N. C.

Thomas B. Wallace, superintendent Columbia Mills Co., Mt. Vernon-Woodberry Cotton Duck Co., New Brookland, S. C.

Chas. Kramer, treasurer and general manager

Cawthon Cotton Mill Co., Estelle Cotton Mills Co., Selma, Ala.

C. T. Meacham, manager Chesterfield Mfg. Co., Petersburg, Va.

John Woodside, president Woodside Cotton Mills, Greenville, S. C.

Grange S. Coffin, president Enoree Mfg. Co., Enoree, S. C.

David Jennings, assistant to president Victor Mfg. Co., Apalache Mills (Greenville, S. C.).

C. W. Ashcraft, president Ashcraft Cotton Mills, Florence, Ala.

D. W. Aderholdt, treasurer the Henry River Mfg. Co., Hildebran, N. C.

W. E. Beattie, president and treasurer Piedmont Mfg. Co., Greenville, S. C.

M. C. Branch, Pine Creek Mfg. Co., Richmond, Va.

Thos. T. Candler, secretary and treasurer Selma Cotton Mills, Selma, N. C.

W. A. Giles, superintendent Graniteville Mfg. Co., Graniteville, S. C.

Ront. Lassiter, treasurer Cheswell Cotton Mill Co., Charlotte, N. C.

Wm. Audley Marshall, superintendent Mass. Mills in Georgia, Lindale, Ga.

Robt. H. Murray, Paramount Knitting Co., South Boston, Mass.

J. A. Martin, secretary and treasurer the Newton Cotton Mills, Hickory, N. C.

C. H. Robertson, superintendent Eno Cotton Mills, Hillsboro, N. C.

ASSOCIATE.

Hubert G. Beede, general superintendent Fales & Jenks Machine Co., Pawtucket, R. I.

Francis D'Olier, Wm. D'Olier & Co., Philadelphia, Pa.

N. L. R. Gardner, vice president and general manager R. L. Greene Paper Co., Providence, R. I.

W. P. Hazlewood, assistant Southern agent Universal Winding Co., Charlotte, N. C.

A. S. Keever, president the Keever Starch Co., Columbus, Ohio.

Wm. B. McBee, president Blackstone Mutual Fire Insurance Co., Providence, R. I.

J. Y. S. Mitchell, T. F. A. M. & M. T. Co., Norfolk, Va.

Edward J. Parrish, commercial agent S. A. L. Ry., Charlotte, N. C.

Chas. W. Peirce, Universal Winding Co., Charlotte, N. C.

M. R. Reeves, Hunter Mfg. & Com. Co., 69 Leonard St., New York, N. Y.

Walter M. Sharples, Jr., W. M. & F. W. Sharples, Philadelphia, Pa.

Robert S. Suffern, manager Suffern & Co., 90-96 Wall St., New York, N. Y.

P. R. Bonner, president Bonner & Barnewall, Inc., 111-113 Hudson St., New York, N. Y.

Frederic A. Chase, treasurer National Ring Traveler Co., Providence, R. I.

Egbert Douglas, manager the Central Carolina Power Co., Raleigh, N. C.

J. Irvine Lyle, general manager Carrier Air Condition Co., Taylor Bldg., Cortlandt St., New York, N. Y.

Malcolm Roberts, Stevens, Sanford, Cushman & Jordan, 47 Worth St., New York, N. Y.

Geo. Koontze, agent Badische Co., P. O. Box 706, Atlanta, Ga.

Geo. R. Ambler, the Jewell Belting Co., Hartford, Conn.

Francis A. Adams, editor New York Commercial, New York, N. Y.

A. H. Brenner, Geo. H. McFadden & Bro.'s Agency, Augusta, Ga.

J. Cloyd Byars, Spring Coal Co., Bristol, Va., Tenn.

C. Randolph Bennett, American Wool & Cotton Reporter, Philadelphia, Pa.

G. N. Carter, F. B. Williams & Sons, Dover, N. H.

R. A. Cochran, January & Wood Co., Maysville, Ky.

R. R. Dancy, R. R. Dancy & Co., Houston, Texas.

J. D. Clemons and Thos. Searles, The Searles Knitting Co., Pottstown, Pa.

J. C. Adcock, J. C. Adcock & Bro., Pottsville, Pa.

John Reber, John Reber, Pottsville, Pa.

Geo. G. Guenther, Reading, Pa.

Chas. E. Leippe, Reading (Pa.) Knitting Mills.

H. W. Sheeler, I. X. L. Hosiery Mills, Robesonia, Pa.

H. A. Miller, Crown Knitting Mills, Topton, Pa.

H. D. Leinbach, Wyomissing, Pa.

Jos. Black & Sons' Co., York, Pa.

W. Scott Harvin, Manning (S. C.) Hosiery Mills.

R. T. Jaynes, Oconee Knitting Mills, Walhalla, S. C.

Ed. P. Jones, Bristol, Tenn.

W. B. Davis and G. H. Miller, Davis Hosiery Mills, Chattanooga, Tenn.

Paul F. Vogel, Magnet Knitting Mills, Clinton, Tenn.

T. H. Johnson, Knoxville (Tenn.) Knitting Mills.

C. H. Bacon, London (Tenn.) Hosiery Mills.

James A. Huff, Rockwood Mills, Tenn.

John M. Jones, Jr., Sweetwater (Tenn.) Hosiery Mills.

E. C. Fennell, Jas. F. White & Co., 56 Worth St., New York, N. Y.

B. M. Graves, Greensboro Supply Co., Greensboro, N. C.

Robt. J. Hoguet, president N. Y. Silk Conditioning Co., 138 Spring St., New York, N. Y.

C. C. Ferrall, agent Geo. H. McFadden & Bro.'s Agency, Meridian, Miss.

Wm. R. Horn, Hussong Dyeing Machine Co., Groveville, N. J.

Julius Leisel, president Leisel Color Co., Greensboro, N. C.

W. A. Rusden, vice president Textile Finishing Machinery Co., Providence, R. I.

Robt. P. Schlemm, secretary Fearing, Whiton & Co., Boston, Mass.

Jno. S. Turner, Geo. H. McFadden & Bro.'s Agency, Birmingham, Ala.

W. J. Thackston, Thackston & Son, Greenville, S. C.

Morris Whitridge, Whitridge, White & Co., 10 South St., Baltimore, Md.

Philip C. Wentworth, agent Kilburn, Lincoln & Co., Fall River, Mass.

The following is a list of those present:

Alabama:
H. Enloe, W. A. Handley Mfg. Co., Roanoke.
O. C. Bagley, W. A. Hindley Mfg. Co., Roanoke.
C. H. Moody, Dwight Mfg. Co., Alabama City.
Brevard Miller, Secretary Siluria Cotton Mill Co.
James R. Pearce, Pell City Mfg. Co.
Arthur H. Lowe, President Park Hill Mfg. Co., Fitchburg, Mass., and Lowe Mfg. Co., Huntsville.
Joseph J. Bradley, Agent Merrimac Mfg. Co., Huntsville.
T. H. Rennie, President Pell City Mfg. Co.

Connecticut:
J. B. Lallande, Middletown.
H. C. Atwood, Treasurer Williamsville Mfg. Co., Killingly.
J. F. Dolan, New London.
C. W. Atwood, Williamsville Mfg. Co., Killingly.

Georgia:
H. C. Arnall, President Wahoo Mfg. Co., Sargents.
Charles H. Gorton, Aragon Mills.
Samuel Porter, Atlanta.
J. Haskins Smith, Cotton Pub. Co., Atlanta.
Wm. H. Harris, President Bellevue Mills Co., Atlanta.
J. A. Nelson, Cotton Trade Journal, Savannah.
Frank G. North, Barber-Colman Co., Atlanta.
D. W. Peabody, General Electric Co., Atlanta.
E. E. Pomeroy, Atlanta.
W. A. Quillian, Atlanta.
Henry P. Meikleham, Massachusetts Mills in Georgia, Lindale.
Charles Warren Davis, President Davis Cotton Mills, Augusta.
Charles M. Mars, Agent American Warp Drawing Machine Co., Atlanta.
Joel Hunter, Atlanta.
M. D. Burnley, Dick Bros. & Co., Atlanta.
J. T. Jennings, Jennings & Bryant, Atlanta.
A. A. MacWhinnie, Savannah Cotton Mills.
J. L. Watson, Allis-Chalmers Co., Atlanta.
E. Chappell, Agent Howard & Bullough, American Machine Co., Ltd., Atlanta.
E. Lang, President Lang Mfg. Co., West Point.
Manuel E. Stevens, Columbus Mfg. Co.
W. M. Sasser, Lawrenceville Mfg. Co.

Indiana:
A. S. Storrs, Evansville.

Louisiana:
Philip St. George Cocke, Thorn & Maginnis, New Orleans.

Maryland:
F. Deane Meanley, Richmond.
John P. Judge, General Electric Co., Baltimore.
Wm. H. Stone, Manufacturers' Record, Baltimore.

Massachusetts:
James K. Lanning, Coldwell-Gildard Co., Fall River.
Edwin H. Rooney, Whitin Mach. Works, Whitinsville.
J. L. Sanford, Barber-Colman Co., Boston.
E. E. Palmer, General Electric Co., Boston.
J. P. Marston, Danker & Marston, Boston.
J. D. Whitaker, Fearing, Whiton & Co., Boston.
W. W. White, Holyoke Machine Co., Worcester.
James Strang, Metallic Drawing Roll Co., Indian Orchard.
E. W. Hitchcock, Corn Products Refining Co., Boston.
R. L. Stevens, Harding, Whitman & Co., Boston.
E. T. Fowler, Foster Machine Co., Westfield.
Mrs. W. W. White, Worcester.
C. P. Gaither, Agent G. S. D., Boston.
Edgar F. Hathaway, American Warp Drawing Machine Co., Boston.
Stephen C. Lowe, Agent John Hetherington & Sons, Boston.
John Jones, Worcester.
Robert W. Neff, Boston.
D. A. Garrick, Treasurer Sycamore (Ala.) Mills, Boston.
E. H. Aldrich, American Luxfer Prism Co., Fall River.
Charles H. Dickson, Journal of Commerce and Commercial Bulletin, New York.
J. H. Cooper, Whitin Mach. Works, Whitinsville.
A. M. Fairley, Washington Mills, Fries, Va.
Henry Ashworth, Fall River.
Arthur S. Wattles, S. R. Wattles & Co., Canton Junction.
A. C. Butler, Boston.
Wm. R. Noone, Wm. R. Noone & Co., Boston.
James Thompson, Dwight Mfg. Co., Boston.
Joseph B. Jamieson, President Holmes Mfg. Co., Boston.
Daniel J. Danker, Danker & Marston, Boston.
Frank L. Nagle, Textile World Record, Boston.
Henry G. Baker, The Stafford Co., Readville.

Michigan:
F. W. Dewey, U. S. Graphite Co., Saginaw.

Mississippi:
W. H. Kline, Vice-President Yazoo Yarn Mills, Yazoo City.
William R. Meadows, Mississippi Textile School, Agricultural College.

New Hampshire:
William G. Nichols, China Mfg. Co., Webster Mfg. Co., and Pembroke Mills, Suncook.

New Jersey:
Wm. R. Horn, Hussong Dyeing Machine Co., Groveville.
Harold Lomas, Baltimore, Manager Crocker Wheeler Co., Ampere.

New York:
Ad. Buzzell, J. H. Williams Co., Utica.
S. H. Steele, Textile Manufacturers' Journal, New York.
William K. Quilhot & Son, Amsterdam.
Leonard Paulson, Paulson, Linkroum & Co., New York.
B. F. Bilsland, General Electric Co., Schenectady.
Mrs. F. A. Adams, New York.
F. A. Adams, New York Commercial, New York.
Samuel O. Garcia, Elmira Knitting Mills and Conewawah Spinning Co., Elmora.
Chas. A. Dunning and Wm. D. Dunning, Alexander Iron Works, Syracuse.
W. D. Dunning, Boomer & Boschert Press Co., Syracuse.
C. H. Clark, Textile Manufacturers' Journal, New York.
Casper G. Decker, President Elmira Knitting Mills.
William V. King, New York Cotton Exchange, New York.
Wm. H. Bilbrough, Elmira Knitting Mills.
Stanley R. Latshaw, Manager Textile Department, Ladies' Home Journal, New York.
Charles A. Meyer, Textile Commission Co., New York.
Geo. F. McDuffie, Utica.
E. P. Ahern, Miller & Co., New York.
E. B. Walden, Corn Products Refining Co., New York.
D. Cardwell, Southern Railway, Columbia, S. C.
W. H. Carrier, Buffalo Forge Co.
Laurus Loomis, Catlin & Co., New York.
Harry H. Lowe, Universal Winding Co., New York.
I. M. Simpson, Dry Goods Economist, New York.
Edmund T. Tannahill, Paulson, Linkroum & Co., New York.
Henry F. Seving, J. Spencer Turner Co., New York.
A. Barnett, New York.
M. R. Jacobs, New York.
Victor M. Graves, A. Klipstein & Co., New York.
John R. Tolar, Jr., Tolar & Hart, New York.

North Carolina:
H. C. Clark, Vice-President Charlotte Supply Co.
G. O. Cobie, Secretary Roxboro Cotton Mills.
Mrs. Henry Rowe, Asheville.
Stuart W. Cramer, Charlotte.
I. Fletcher Craven, Columbia Mfg. Co., Ramseur.
T. J. Lilliard, Treasurer Fidelity Mfg. Co., Charlotte.
J. W. Lindau, President Coulter & Lowry Co., Greensboro.
J. A. Long, President Roxboro Cotton Mills.
Rush T. Wray, DeHaven Mfg. Co., Charlotte.
Jas. Kerr, Jr., Charlotte.
A. W. Burch, American Textile Manufacturer, Charlotte.
C. W. Johnston, President Highland Park Mfg. Co., Charlotte; Brown Mfg. Co., Concord, and Anchor Mills, Huntsville.
Mrs. C. B. Bryant, Charlotte.
F. C. White, Lenoir Cotton Mills.
J. O. White, President Modena Mill, Gastonia.
Moses C. Winston, President Lizzie Cotton Mills, Selma.
C. B. Bryant, Jennings & Bryant, Agents Geo. H. McFadden & Bro., Charlotte.
C. M. Burns, President Wadesboro Cotton Mills.
D. M. Carpenter, President Providence Cotton Mills and Union Cotton Mills, Maiden.
J. S. Cothran, American Moistening Co,, Charlotte.
E. S. Reid, Harding, Whitman & Co,, Charlotte.
Thomas Nelson, Director of Textile Department A. & M. College, West Raleigh.
J. M. Roberts, Secretary John Rudisill Mfg. Co., Lincolnton.
Henry Rowe, Elk Mountain Mills, Asheville.
John F. Shackleford, President Fountain Cotton Mills, Tarboro.
E. A. Smith, President Chadwick-Hoskins Co., Charlotte.
J. C. Smith, Secretary Shelby Cotton Mills.
W. H. Sumner, Stanley Creek Cotton Mills, Stanley.
L. L. Staton, President Tarboro Cotton Factory.
John L. Patterson, Rosemary Mfg. Co., Roanoke Rapids.
S. B. Alexander, Alexander & Garsed, Charlotte.
Chas. W. Peirce, Universal Winding Co., Charlotte.
W. B. Pratt, W. H. Bigelow, Charlotte.
J. H. Webb, Treasurer Eno Cotton Mills, Hillsboro.
J. S. Patterson, Vice-President Spray Cotton Mills.
B. H. Parker, Gastonia.
E. L. Pegram, Stanley Creek Cotton Mills.
John C. Rankin, President Lowell

tain Mills, Lowell.
R. R. Ray, Treasurer McAden Mills, McAdensville.
S. B. Tanner, President Henrietta Mills and Florence Mills, Caroleen.
J. F. Taylor, President Kinston Cotton Mills.
Alfred A. Thompson, President Raleigh Cotton Mills.
Charles E. Sampson, Catlin & Co., New York.
William M. Sanders, President Smithfield Cotton Mills.
J. M. Rhodes, President Rhodes Mfg. Co., Lincolnton.
A. H. Washburn, Charlotte.
Edwin Howard, Charlotte.
J. A. Marhid, Newton Cotton Mills, Hickory.
Mrs. C. W. Johnston, Charlotte.
Thos. H. Webb, Erwin Cotton Mills, Duke.
Miss Rose Dell, Charlotte.
Miss Sara Tanner, Charlotte.
Mrs. S. B. Tanner, Charlotte.
Kenneth Tanner, Charlotte.
L. A. Dodsworth, Secretary Mayes Mfg. Co., Charlotte.
H. J. Forsythe, Cooleemee Cotton Mills.
L. R. Hagood, Secretary Lula Mfg. Co., Kings Mountain.
A. G. Brenizer, Cashier Commercial National Bank, Charlotte.
C. J. Brown, Universal Winding Co., Charlotte.
Wm. A. Hart, Fountain Cotton Mills, Tarboro.
J. L. Hartsell, Young-Hartsell Mills Co., Concord.
C. A. Hunt, President Nokomis Cotton Mills, Lexington.
A. C. Hutchison, Jas. E. Mitchell & Co., Charlotte.
C. E. Hutchison, Secretary Nims Mfg. Co., Mount Holly.
Edwin Howard, Mason Machine Works, Charlotte.
Robert E. Buck, Arnold, Hoffman & Co., Greensboro.
T. W. Crews, Charlotte.
James H. Cutler, American Forestry Association, Washington, D. C.
J. H. Cutter, J. H. Cutter & Co., Charlotte.
George Blanton, First National Bank, Shelby.
Richard D. Thomas, Jos. Sykes Bros., Charlotte.
George G. Thompson, Jr., Southern Railway, Greensboro.
W. H. Bigelow, Agent Ashworth Bros., Charlotte.
Alfred S. Hunt, Foster Machine Co., Charlotte.
R. M. Miller, President The Elizabeth Mills, Charlotte.
R. S. Reinhardt, President Elm Grove Cotton Mills, Lincolnton.
F. K. Broadhurst, Secretary Smithfield Cotton Mills.
A. W. McMurray, Secretary Belmont Mill Co., Shelby.
J. P. McRae, President Scotland Cotton Mills, Laurinburg.
C. H. Ireland, Odell Hardware Co., Greensboro.
D. H. Warlick, Dudley Shoals Cotton Mills, Granite Falls.
John Withers, Flint Mfg. Co., Gastonia.
P. M. Keller, Cora Cotton Mills, Kings Mountain.
F. T. Brinkley, D. F. A. N. & W. Ry. Co., Winston-Salem.
Edward Clark, Jr., General Electric Co., Charlotte.
E. L. Hissell, Erwin Cotton Mills, Duke.
Mrs. J. W. Lindau, Greensboro.

Ohio:
Mitchell Johnson, Am. Diamalt Co., Cincinnati.
K. R. Hooker, Putnam-Hooker Co., Cincinnati.
Frank A. Snyder, H. & W. H. Lewis, Philadelphia.
Putnam-Hooker Co., Cincinnati.
Sydney W. Fiske, Am. Diamalt Co., Cincinnati.

Pennsylvaia:
W. A. Spellissy, Jenckes Spinning Co., Philadelphia.
Phil S. Steele, W. M. & F. W. Sharples, Philadelphia.
C. O. Alexander, Treasurer Alexander Bros., Philadelphia.
J. E. Rhoads & Sons, Philadelphia.
Chas. J. Webb, Eureka Cotton Mills, Chester, S. C., and of C. J. Webb, Philadelphia.
V. C. Carwithen, E. S. Hyde Co., Philadelphia.
J. W. Palmer, Am. Brazing Co., Philadelphia.
M. P. Hoffman, Chas. J. Webb & Co., Philadelphia.
W. T. Westerman, Ontario Spinning Co., Philadelphia.
Jas. H. Billington, President Jas. H. Billington & Co., Philadelphia.
Mrs. C. E. Orden, Philadelphia.
Harry Miller, Addressograph Co., Philadelphia.
Mrs. E. D. Dorsey, Philadelphia.
Francis D'Olier, Wm. D'Olier & Co., Philadelphia.
E. D. Dorsey, Addressograph Co., Philadelphia.
M. C. Hall, Geo. W. Chapin, Philadelphia.
Geo. W. Hughes, Treasurer The Hughes Mfg. Co., Philadelphia.
C. H. Stevens, Harding, Whitman & Co., Philadelphia.
George W. Chapin, Philadelphia.
Geo. B. Crocker, Globe Machine Works, Philadelphia.
T. Ashby Blythe, Philadelphia.
Mrs. W. Wickersham, Pittsburg.
Mrs. W. G. Miller, Pittsburg.
Thomas P. Walker, Wm. D'Olier & Co., Philadelphia.
Chas. A. Crowell, Underfeed Stoker Co. of America, Philadelphia.
Schell, Taylor & Longstreth, Philadelphia.
E. W. Jenkins, Geo. W. Chapin, Philadelphia.
B. J. Hoffman, Chas. J. Webb & Co., Philadelphia.
Joseph H. Parvin, Philadelphia.
Edward S. Hyde, Philadelphia.
Joseph B. Miller, Henry Bower Chemical Mfg. Co., Philadelphia.
Walter G. Miller, Jones & Laughlin Steel Co., Pittsburg.
Harold Godfrey, Philadelphia.
C. E. Oram, J. H. Billington Co., Philadelphia.
C. Edwin Webb, C. J. Webb & Co., Philadelphia.
Pyam L. Gilkey, Albert Ivins Croll, Philadelphia.
Martin P. Glynn, R. A. Blythe, Philadelphia.

Rhode Island:
Geo. W. Boyd, American Supply Co., Providence.
Mrs. John E. Kendrick, Providence.
Herbert W. Rice, U. S. Gutta Percha Paint Co., Providence.
George E. Tillinghast, Tillinghast, Stiles Co., Providence.
John F. Street, Eddy & Street, Providence.
Wm. B. McBee, President Blackstone Mutual Fire Insurance Co., Providence.
Edgar L. Merrow, National Ring Traveler Co., Providence.
Mrs. Alex. S. West, Providence.
Ezra Dixon, Dixon Saddle Co., Bristol.
Albert A. Jenks, President Fales & Jenks Machine Co., Pawtucket.
Antoine Spencer, Pawtucket.
F. M. Hoadley, Rhode Island Contract Engineering Co., Providence.
John E. Kendrick, President American Supply Co., Providence.
L. W. Campbell, Woonsocket Machine & Press Co.
S. H. Spellings, Providence.
H. Martin Brown, Treasurer U. S. Shuttle & Bobbin Co., Providence.
Hubert G. Beede, Fales & Jenks Machine Co., Pawtucket.
J. P. Eddy, Jr., Secretary Tillinghast Stiles Co., Providence.
Frederick W. Howe, Manager Providence Works, Crompton & Knowles Loom Works, Providence.
Fred M. Hoadley, Vice-President Rhode Island Contract Engineering Co., Providence.

South Carolina:
W. F. Cox, President Cox Mfg. Co., Anderson.
Robert Chapman, Treasurer Marlboro Cotton Mills, McColl.
P. H. Freeman, Whittaker Cotton Mills, Blacksburg.
C. M. Smith, Whittaker Cotton Mills, Blacksburg.
J. D. Woodside, Treasurer Woodside Cotton Mills, Greenville.
Ellison A. Smyth, President Pelzer Mfg. Co., Belton Mills, Ninety-six Cotton Mill.
M. G. Stone, Pacolet Mfg. Co., Spartanburg.
Lewis W. Parker, President Olympia Mills, Richland Mills and Granby Mills, Columbia; Victor Mfg. Co., Greers; Treasurer Monaghan Mills, Greenville.
J. J. Ward, Warren Mfg. Co., Warrenville.
R. T. Fewell, President Arcade Cotton Mills, Rock Hill.
Miss Jessie Lipscomb, Gaffney.
Mrs. A. W. Bryant, Pacolet.
Isaac Andrews, President Andrews Loom Reed & Harness Co., Spartanburg.
Daniel Gray, Consolidated Cotton Duck Co., Columbia.
J. M. Litton, Greenville.
Glenn-Lowry Mfg. Co., Whitmire.
W. M. Hamer, Dillon Cotton Mills and Maple Cotton Mills, Dillon.
V. W. Moore, Manchester Cotton Mills, Rock Hill.
H. J. Forsyth, Springstein Mills, Chester.
T. J. Lipscomb, Columbia.
Vivian Q. Guion, Barber-Colman Co., Greenville.
A. H. McCarrel, Aiken Mfg. Co., Bath; Seminole Mfg. Co., Clearwater.
J. H. M. Beaty, Olympia, Richland and Granby Mills, Columbia.
Henry Z. Rees, Harris Springs Hotel.

Tennessee:
Wm. T. Lang, Brookside Mills, Knoxville.
Cotton Mills and Spencer Moun-
Mrs. C. F. Coles, Nashville.

Virginia:
G. F. Roberts, Washington Mills, Fries.
W. T. Tillar, Treasurer Ashby Cotton Mills, Inc., Emporia.
N. P. Gatling, Lynchburg.
Thos. Elmer Will, Washington, D. C.
R. S. Tuck, Richmond.
W. T. Dabney, Chamber of Commerce, Richmond.
M. J. Murphy, Norfolk.
L. P. Kates, Richmond.
John M. Miller, Jr., Vice-President First National Bank, Richmond.
Samuel B. Cary, Castner, Curran & Bullit, Roanoke.
C. K. Mount, Stonega Coke & Coal Co., Norfolk.
J. D. Palmeriee, Pittsburgh & Ohio Mining Co., Norfolk.
Maj. R. H. Cowan, Radford, Va.
Hon. Jas. H. Small, Washington, D. C.
R. K. Gilbert, National Starch Co. and Corn Products Refining Co., Richmond.

Wisconsin:
Maurice W. Thomas, Allis-Chalmers Co., Milwaukee.

THE WOOLEN AND WORSTED MANUFACTURERS.

The semi-annual meeting of the American Association of Woolen and Worsted Manufacturers was held last month in New York. The members of this association represent woolen and worsted mills with a capital of over $320,000,000. Since its organization the association has done excellent work toward reforming various abuses in the trade. Among the important things accomplished has been the formation of a joint committee representing the Association of Woolen and Worsted Manufacturers and the Clothiers' Association. The co-operation made possible by this union of naturally conflicting interests has already resulted in much good.

The officers of the association are Joseph E. Fletcher, president; Arthur Cox, treasurer, and Charles Porter, Jr., secretary.

The secretary's office is at 79 Fifth Ave., New York City.

The following is a list of the members:

Active Members.

Amos Abbott Company.
Airedale Mills Company.
Ashaway Woolen Company.
Ashland Mfg. Co.
Ashtabula Worsted Mills.
Appleton Woolen Mills.
Andrew's Mill Co.
The Beebe-Webber Co.
Bemis Mills.
Black River Woolen Co.
Sidney Blumenthal & Co., Inc.
Bradford Mills.
Brighton Worsted Co.
Brown & Whittier.
Caledonia Mills.
Carleton Mills Company.
Carolina Mills Company.
Charlottesville Woolen Mills.
Cocheco Woolen Mfg. Co.
Columbiaville Woolen Company.
Colwell Worsted Mills.
Comins & Co., Inc.
Coronet Worsted Company.
Crawford Woolen Company.
Crown Mills.
Curtiss & Warren.
S. F. Cushman & Sons.
Concord Woolen Mills.
Daniels Worsted Mills.
Delaware Cotton Company.
W. J. Dickey & Sons, Inc.
Robert Dobson Co.
Dumbarton Woolen Mills.
Dunn Worsted Company.
Dawson Mfg. Co.
Earnscliffe Worsted Mills, Inc.
Earnsdale Worsted Company.
Empire Worsted Mills.
Enfield Mfg. Company.
Excelsior Mills.
Falcon Worsted Company.
Falls City Woolen Company.
Fern Rock Woolen Mill.
Field Worsted Mills.
Folwell Bros. & Company.
French River Textile Company.
Julius A. Gebauer.
Georges River Mills.
Glasgow Mills.
Franklin Glazier & Son.
Glen Woolen Mills.
Glen Worsted Mills.
Glenside Woolen Mills.
Gonic Mfg. Co.
A. D. Gleason Woolen Mills.
Goodall Worsted Company.
Greaves Bros.
Greenville Woolen Mills.
Hadley Mills.
Hall Brothers.
Hope Worsted Mills.
Humboldt Bay Woolen Mills Co.
M. L. Hussey Woolen Co.
A. D. Irwin & Brother.
Jamestown Worsted Mills.
H. C. Jones Company.
Jewell Brook Woolen Company.
Kent Manufacturing Co.
Thomas Kitson & Son.
Knoxville Woolen Mills.
Thomas Kent Mfg. Co.
Lippitt Woolen Mill.
The Long Bros. Co.
Martinsburg Worsted and Cass Co.
Maynard Mills Company.
Monarch Woolen Mills, Inc.
Murphy & Bros.
Musketaquid Mills.
Mystic Mfg. Co.
Namquit Worsted Mills.
Nashville Woolen Mills Company.
Newport Woolen Company.
Norristown Woolen Company.
North Adams Mfg. Company.
The Ottaquechee Woolen Co.
David G. Orme.
Oak Valley Mills.
Paramount Worsted Mills.
Angus Park.
Wm. Park.
Passaic Woolen Company.
Pawcatuck Woolen Mills.
Pequea Mills.
P. M. Pfaffmann.
Piscataquis Woolen Co.
Plainfield Woolen Co.
Pontoosuc Mfg. Company.
Chas. Porter & Son.
W. H. Prendergast.
Richard J. Prince.
S. L. Prince.
Princeton Worsted Mills.
Racine Woolen Company.
Rhode Island Worsted Company.
Robertsford Worsted Mills.
Rochester Woolen Company.
C. A. Root Co.
James Roy & Co.
Salts Textile Mfg. Co.
Sangerville Woolen Co.
A. L. Sayles & Sons.
F. L. Sayles Company.
Sayles, Jencks Mfg. Co.
Saxonia Dress Goods Mills.
Saxonville Mills.
H. F. Scatchard Mfg. Co.
Selden Worsted Mills.
Shackamaxon Worsted Mills.
Shelbourne Mills.
Singleton Worsted Company.
Fred R. Smith.
Smith Woolen Company.
I. W. Smith Woolen Company.
Somerset Worsted Mills.
Somerville Mfg. Company.
South Bend Woolen Company.
Southwark Mills Company.
E. T. Steel & Co.
Sterling Mills Company.
Stott Woolen Company.
Strong, Hewat & Co.
Saugus Mfg. Co.
Talbot Mills.
The William Tinkham Company.
Tremont Worsted Company.
Tilton Mills.
Uxbridge Worsted Company.
Virginia Woolen Company.
Louis Walther Mfg. Co.
Warren Woolen Company.
Waterhouse & Howard.
Waverly Woolen Co.
John Williams Mfg. Company.
James & E. H. Wilson.
Thomas H. Wilson.
Wolfenden, Shore & Co.
Woodstock Mills Company.
Wright & Hall Textile Company.
Wassookeag Woolen Co.
Yorkshire Worsted Mills.
Yale Woolen Mills.

Associate Members.

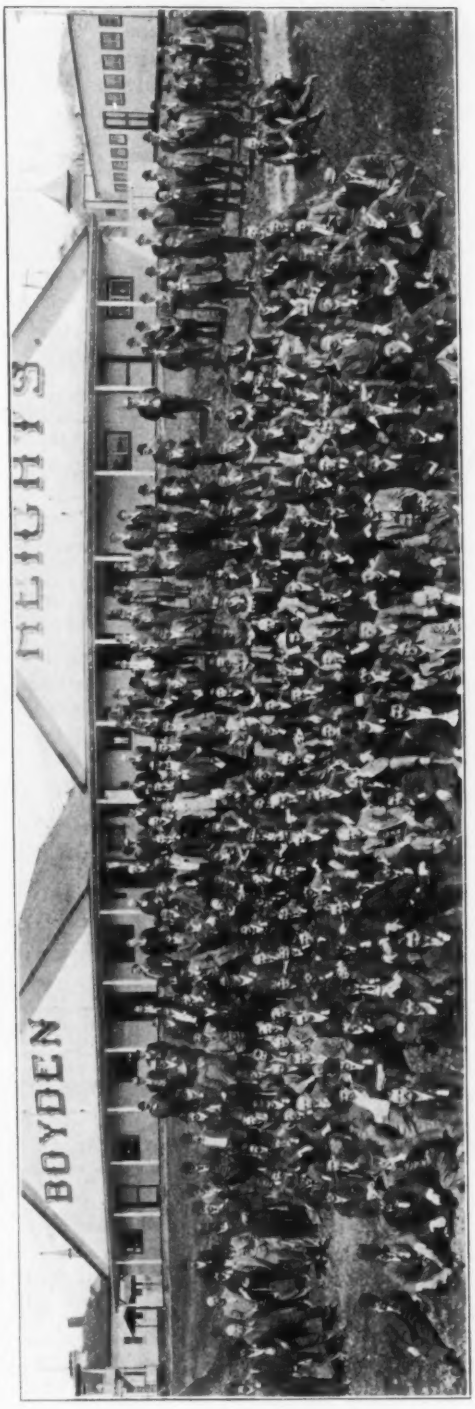
Allen, Lane & Co.
Fred'k Almy & Co.
C. A. Auffmordt & Co.
C. Bahnsen & Co.
Joseph Benn & Sons, Inc.
Arthur Berel.
Birch & Joel.
Boessneck, Broesel & Co.
Brumaghim & Smith.
David & Rosenthal.
L. F. Dommerich & Co.
B. M. Ewing & Co.
Fisher, Kennedy & Co.
Forstmann & Co.
Greeff & Co.
John M. Harris & Co.
C. A. Heaton.
H. Herrmann, Sternbach & Co.
Francis H. Holmes.
Hudson Woolen Co.
Lambert Huntington.
Innerarity & Kirkaldy.
A. D. Juilliard & Co.
Herbert Lawton & Co.
Austin T. Levy.
Libby & Co.
H. W. T. Mali & Co.
M. H. Meinhard & Co.
Neale & Cruickshank.
Nixon & Thickins.
Nostrand & Colman.
Parker Wilder & Co.
F. C. Patterson.
Gus L. Rosenberg.
L. Rubenstein & Co.
Rusch & Co.
Schefer, Schramm & Vogel.
Hugo N. Schloss.
Delavan C. Smith.
Isaac Snedeker.
Stroud & Crawford.
W. Stursberg, Schell & Co.
Fred'k Vietor & Achelis.
Vreeland & Wilson.
F. L. Wendell.
Wendell, Fay & Co.

THE NATIONAL ASSOCIATION OF WOOLEN AND WORSTED OVERSEERS.

The twenty-fifth semi-annual meeting of the National Association of Woolen and Worsted Overseers which was held at Boyden Heights, Providence, R. I., on Saturday, May 16, was a decided success. There were in the neighborhood of 300 members present. It was a beautiful day and every member enjoyed himself as well if not better than at any other meeting.

The meeting was called to order by Presi-

dent James McDowell shortly after 11 a. m. The minutes of the preceding meeting, which was held at the American House, Boston, Mass., were read and approved. Secretary Walter Pickford announced the names of several who had applied for membership and all were declared elected. Charles Hurst made a report from the committee on arrangements. President McDowell requested Vice-president P. H. Gallagher to take the chair while he made a report for



A GROUP OF MEMBERS OF THE N. A. WOOLEN AND WORSTED OVERSEERS

the special committee appointed at the last meeting to look into the advisability of co-operating with the industrial school movement. The conclusion of the investigation of the committee was that to recommend to the members that each father of a boy should try to secure the benefit of a technical training for his son so as to relieve him of the disadvantages under which many older members have had to contend with. He claimed also that it was a decided advantage to the young men who were about to enter mill life to have a thorough technical training in addition to the practical experience gained later on.

The election of officers for the coming year was the next business. James E. Okell of Pascoag, R. I., was nominated for president; Frank P. Gallagher of Woonsocket, R. I., vice-president; J. H. Pickford of Clinton, Mass., second vice-president and several names were offered for the position as third vice-president. Thos. Buchan of Hyde Park, Mass., was recommended for treasurer, and Walter Pickford of Leominster, Mass., for secretary. Henry Mowry was nominated for secretary of the beneficiary department and Thos. Buchan, treasurer of the beneficiary department. The same trustees of the beneficiary department were recommended: John Thornton, Chepachet, R. I.; Eleazer Davis, Plymouth, Mass.; Louis Carmark, Lymansville, R. I.

Treasurer Thos. Buchan read a letter from the widow of the late Francis J. Dorsey, who was superintendent of the Geo. W. Olney Woolen Company, Cherry Valley, Mass., who had died without paying all the dues in the beneficiary department. After some discussion it was unanimously voted to donate from the general fund of the association the sum of $100 to be paid to Mrs. Dorsey. This recommendation was urged by Charles Hurst as he thought that otherwise other members would neglect their payments thinking that if the benefit was allowed to one, it would be allowed to others. All favored Mr. Hurst's proposal.

The meeting adjourned for dinner at 12.30. After the banquet those in attendance were photographed. The meeting was called to order by President McDowell at 3 p. m. It was voted that Frazier L. O'Leary has the right to publish the manual for the association for the next year. It was also voted to hold the next meeting at Boston, the third Saturday in November, at the American House. P. H. Gallagher, Walter Pickford and Thomas Buchan were appointed a committee on arrangements for this meeting. Each member was presented with a badge with the following words: "S. A. Meeting of the N. A. of W. & W. O., Boyden Heights, May 16, 1908."

The following members were present:

Connecticut:
Frank Creighton, Quinebaug.
C. M. Ellis, Putnam.
Burt Cooke, Central Village.
J. J. Burns, Moosup.
Edward H. Ambach, Norwichtown.
Henry G. Morey, Danielson.
John H. Howe, Mystic.
John T. Lyons, Norwichtown.
T. Joseph Jennings, Central Village.
F. C. Neff, Rockville.
John Heaton, Stafford.
Geo. Smethurst, Central Village.
Wm. Eyers, Central Village.
E. A. Whitehead, Central Village.
Clarence C. Harris, Killingly.
Wm. A. Bagley, Danielson.
Chas. J. Henault, Norwich.
J. E. Bradley, Rockville.
A. B. Shepard, Stafford Springs.
Fred Ashton, Central Village.

Maine:
M. C. O'Brien, Oldtown.

Massachusetts:
Samuel J. Nield, North Chelmsford.
Chas. O. Keegan, Uxbridge.
Daniel Sullivan, Oxford.
John R. Simpson, Fitchburg.
Thos. Burke, Webster.
Pearly H. Grover, Chapinsville.
Geo. Lawton, N. Andover.
James H. Hillens, Lawrence.
Walter Nieber, North Bellingham.
F. L. St. George, North Bellingham.
D. Duffey, North Bellingham.
Thos. Goddard, Careyville.
Chas. A. Kennedy, Concord Junction.
Geo. R. Howarth, Careyville.
Bernard V. Searle, Lowell.
J. W. Whitehead, Lowell.
Albert E. Schoon, Lowell.
James Clavin, Webster.
W. B. Pine, E. Douglas.
John H. Greenhalgh, Gilbertville.
Chas. B. Jennings, Webster.
Albert Crabtree, Franklin.
James E. Mullin, N. Bellingham.
Turner Robinson, Franklin.
Thos. F. Croffswell, Concord Junction.
James T. Lord, Blackstone.
James J. Furron, Collinsville.
Henry Walton, Plymouth.
C. P. Murphy, Plymouth.
John H. Davitt, Uxbridge.
A. B. Crowell, Concord Junction.
P. T. Donahue, Farnamsville.
P. J. Harney, Pittsfield.
James H. Cobb, Careyville.
D. O. Evans, Careyville.
Daniel T. Shea, N. Bellingham.
John P. Leary, Northboro.
Asa Garth, Fitchburg.
Hiram Rathburn, Byfield.
Robt. B. Scott, Cherry Valley.
Richard Grant, Millbury.
Thos. Thomas, Lowell.
Jos. Fielding, Lowell.
Thos. P. Lenehan, Lowell.
Chas. Dursthoff, Lowell.
Harold E. Whittaker, Lowell.
Robt. J. Harrington, Dalton.
John P. Barry, Cherry Valley.
Howard A. Emsley, Blackstone.
W. V. Odell, Blackstone.
Fred A. Gunter, W. Fitchburg.
J. J. Lyons, Blackstone.
Thos. P. Smith, Worcester.
John Howarth, Lowell.
James J. Rae, Cherry Valley.
Fred H. Buckley, Lowell.
Frazier L. O'Leary, Boston.
W. R. McConnachie, Clinton.
J. E. Barber, N. Bellingham.
A. C. Fredericks, Pittsfield.
F. W. Birkinshaw, Pittsfield.
M. H. McElroy, Worcester.
Chas. F. Hacking, Blackstone.
L. M. Allison, Worcester.
T. E. Moore, Webster.
Christopher Dunlavy, Boston.
Walter Wright, Fitchburg.
John Ogden, Lowell.
E. W. Kebugh, Middleboro.
M. J. O'Brien, Lawrence.
Ernest F. Moore, Collinsville.
Cornelius F. McLaren, E. Douglas.
Thos. E. Buxton, E. Douglas.
Joseph Partra, Uxbridge.
Alfred Richardson, Worcester.
Harry McClintock, Blackstone.

New Hampshire:
T. Mullin, Franklin.
T. N. Parent, Franklin.

New Jersey:
Clovis Henault, Trenton.
Pennsylvania:
James Gibbs, Philadelphia.
Moses Lawlor, Bristol.
Edwin E. Leith, Clifton Heights.
John E. Peacock, Clifton Heights.
Martin Welch, Bristol.
James Gibbs, Philadelphia.
Emil Niesson, Philadelphia.
W. J. Murray, Bristol.
Rhode Island:
Fred R. Williams, Washington.
John F. Drummond, Hope Valley.
J. H. Driscoll, Providence.
Wm. Driscoll, Providence.
C. A. Williamson, Hope Valley.
William F. Mulligan, Harrisville.
Frederick W. Kennedy, Harrisville.
Frederick W. Allen, Harrisville.
Frank Eller, Providence.
Jos. Donahue, Harrisville.
John E. Hay, Woonsocket.
James Knox, Glendale.
J. F. Branscomb-Doyle, Thornton.
William Waterhouse, Providence.
Leonard Hinchliffe, Peace Dale.
Martin O'Toole, Woonsocket.
Geo. R. Burdick, Kenyon.
Frederick Jones, Centreville.
John J. Linnehan, Providence.
John T. Moore, Centreville.
J. H. Creaser, Harrisville.
Rinaldo E. Greene, Mapleville.
John E. Lancaster, Pawtucket.
Thos. J. Ryan, Pascoag.
Thos. Lyons, Providence.
Francis W. Parker, Nasonville.
Andrew Smith, Kenyon.
Ulric Burke, Carolina.
Eugene Deady, Providence.
Lawrence Prendergast, Woonsocket.
William M. Lacey, Pascoag.
Edgar M. Taft, Bridgeton.
Anthony Lauren, Greenville.
Fred Carter, Pascoag.
Henry H. Daro, Pascoag.
J. H. Parker, Lafayette.
Richard Owens, Providence.
John Henderson, Providence.
Thomas Frazer, Glendale.
Michael F. Quinn, Pascoag.
W. H. Nettleton, Manton.
Patrick Purcell, Manton.
James Wilson, Manton.
Edward Powell, E. Greenwich.
Geo. Cavanaugh, Providence.
Thos. Gordon, Oakland.
Thos. J. Sexton, Greenville.
Jas. H. Toas, Riverside.
Herman Ambach, Providence.
A. Hey, Woonsocket.
Samuel Yorde, Thornton.
John Hefferman, Lymansville.
Herman E. Shulze, Greenville.
Geo. H. Coleman, Pascoag.
Ben Oldfield, Washington.
Ephraim Bedford, Thornton.
John Hetherman, Oakland.
Edgar Coe, Pawtucket.
Richard J. Hill, Woonsocket.
James Davies, Harrisville.
James Parkin, Harrisville.
D. A. Greene, Bristol.
T. R. McClure, Woonsocket.
James A. Poop, Washington.
Charles Whitehead, Washington.
R. H. Hartley, Allenton.
James A. Reynolds, Lymansville.
Chas. M. Hurst, Providence.
James O'Kell, Pascoag.
Robt. Dawson, Harrisville.
Albert Ingleston, Providence.
Fred V. Hanson, Greenville.
Roslin Hartley, Allenton.
Geo. C. Carr, Woonsocket.
P. F. Doyle, Allenton.
Thos. F. Rieley, Harrisville.
Vermont:
Albert E. Jones, Ludlow.
Thos. D. Holden, Winooski.

KNIT GOODS MANUFACTURERS' ASSOCIATION.

The first annual meeting of this Association was held at the Hotel Ten Eyck, Albany, N. Y. With the exception of a banquet, the meetings were secret, no report of the proceedings being issued for publication. At the banquet in the evening the speakers were William Whitman of Boston, who delivered an address on the "Inviolability of Commercial Obligations." He was followed by E. P. Walker of New York, who spoke in defence of the methods of trade in cotton on exchanges. Franklin Presbrey, New York, spoke on "Trade-Mark Publicity."

Those present at the banquet included the following:

Quentin McAdam, Little Falls, N. Y.; J. W. Allis, Little Falls, N. Y.; L. U. Lynt, Empire Knitting Mill; A. J. Stone, Cohoes, N. Y.; James H. Shine, Philmont, N. Y.; J. H. Musgrove, Fort Plain, N. Y.; Charles Bailey, Amsterdam, N. Y.; John R. Blood, Sherburne, N. Y.; F. B. Harder, Troy, N. Y.; Wm. D. Mahoney, Utica, N. Y.; Beecher M. Crouse, Amsterdam, N. Y.; W. S. Van Brocklin, Waterford Knitting Co.; C. L. Mitchell, Cohoes, N. Y.; S. A. Clarke, Oneita Knitting Co.; John B. Wilk, Syracuse, N. Y.; A. G. Velasco, St. Johnville, N. Y.; J. H. Reaney, Pittsfield, Mass.; Wm. H. Wild, Utica, N. Y.; W. R. Schremp, Cohoes, N. Y.; Walter Buck, Utica, N. Y.; R. P. McLoughlin, Little Falls, N. Y.; James Fenton, Cohoes, N. Y.; S. A. Moore, Perry, N. Y.; J. M. Traber, Amsterdam, N. Y.; John K. Stewart, Amsterdam, N. Y.; Clarence Stewart, Amsterdam, N. Y.; J. S. McElwain, Johnstown, N. Y.; Thomas Breslin, Cohoes, N. Y.; Elliot Mfg. Co., Manchester, N. H.; Brown Knitting Co., Warsaw, N. Y.; Novelty Knitting Underwear Co., Waterford, N. Y.

The following officers were elected:

President Quentin McAdam, Utica Knitting Company, Utica, N. Y.; first vice president, L. U. Lynt, Little Falls Manufacturing Company, Little Falls, N. Y.; second vice president, A. J. Stone, Empire Knitting Mills, Cohoes, N. Y.; third vice president, J. H. Shine, Hope Knitting Company, Cohoes, N. Y.; fourth vice president, Frank B. Harder, High Rock Knitting Company, Philmont, N. Y.; fifth vice president, W. D. Mahoney, Troy Knitting Company, Troy, N. Y.; treasurer, Beecher M. Crouse, Avalon Knitwear Company, Utica, N. Y.; secretary, W. H. Morton, Utica, N. Y. Three members of the executive committee, whose terms expire May, 1911, were elected as follows: Judson Gilbert, Gilbert Knitting Company, Little Falls, N. Y.; Isaac Roff, Roff Underwear Company, Troy, N. Y.; Robert MacKinnon, Robert MacKinnon & Co., Little Falls, N. Y.

John Kay, the inventor of the fly shuttle, made nothing out of the invention which revolutionized an industry. The woolen manufacturers refused to pay for the invention and forced Kay into ruinous law suits.

As yet there are only 616 embroidery machines in the United States, and the St. Gall, Switzerland, manufacturers laugh at the idea of America being able to compete with Switzerland in this industry. It seems to be a fact, however, that on cheap handkerchiefs and some other articles, especially novelties that have to be put on the market quickly to meet a sudden demand, the United States is already getting the home market, and in time may be able to compete on broader lines.—Special Agent W. A. Graham Clark.

National Association of Hosiery and Underwear Manufacturers.

The National Association of Hosiery Manufacturers held its meeting at the Continental Hotel, Philadelphia, on May 11, 1908. The first session opened with the following address by President Joseph S. Rambo:

THE PRESIDENT'S ADDRESS.

During the months of financial depression through which we have passed, that we were enabled to resist the wholesale attempt on the part of the jobbers to cancel orders and disregard their contracts, was very largely due to the existence of our association; and the prompt and vigorous manner in which our members combated such unfair and unbusinesslike methods, thereby saving our industry from utter demoralization, which would have resulted disastrously to many of us, should be commended.

The purchasing of yarn upon what has been termed a "net weight" basis is another thing upon which we feel our association should be congratulated. For the accomplishment of this just and only fair method of purchasing yarns, our association has been "on the firing line," and while for a time the battle seemed hopeless, knowing that we were right in our position, and keeping everlastingly at it, there is now every prospect of the spinners treating this matter in a just way, and it is the privilege, aye the duty, of everyone of our members to insist upon his rights, and if he does, it will not be long before this question will be settled definitely in our favor for all time. It is of great importance, however, that each of us assumes towards the spinners the proper spirit in treating this matter. We should be especially careful that no unjust claims be presented because of variation in weights, as it should be proven to them that our assertion that this method would be less productive of claims and disputes than the old 2 per cent. allowance basis is a correct one.

We would strongly recommend the co-operation and alliance of our association with others, whose interests are identical in the endeavor to defeat such measures as are being presented from time to time in the Senate and House of Representatives, which are inimicable to the employers of labor, and harmful to the manufacturing interests in general. The so-called eight-hour laws and anti-boycott bills have been springing up continually during the past two years, urged very strongly by certain labor organizations, and presented and favored by certain of our senators and representatives who are anxious to curry the favor of the labor vote. Such legislation would not only be a menace to our industry, but would have a harmful effect on the general community, and would, in all probability, be harmful ere long to the very ones seeking relief from Congress for their imagined wrongs by having bills passed that are stamped with "class legislation." We should, therefore, combat them in every way possible. Whenever such bills are under consideration, each member of our association should write to his Senators and Representatives protesting against them. "Class legislation," whether for the benefit of employers or employes, is dangerous, and

JOS. S. RAMBO, RETIRING PRESIDENT OF THE NATIONAL ASSOCIATION OF HOSIERY MANUFACTURESS

should be opposed vigorously. Because of the decision of the Supreme Court sustaining the Interstate Sherman Law, the labor organizations have become desperate, and, headed by their president, Mr. Gompers, are not only asking, but demanding, from Congress relief from the law, and to advance their cause, have induced some of the farmers to join them in such demands.

It will be necessary for us to consider very seriously the question of the revision of the tariff in the near future. Doubtless many of you are familiar with a bill lately introduced by Senator Beveridge of New Jersey, looking toward the appointment of a tariff commission. The passage of this bill was very strongly approved by the National Association of Manufacturers, and Mr. James W. Van Cleave, president of that association, went to Washington to appear before that committee. After carefully studying this bill, however, I can see very grave dangers in such a commission for an industry such as ours, which requires high protection because of the severe competition with which we are confronted, especially

from other countries where the rates of wages are much lower than ours. There are, doubtless, many changes necessary in our present tariff, not alone because there never was and never will be a perfect tariff, because of the extent and diversified interests of these United States, but also because conditions have changed since the passage of the Dingley tariff bill, but I think this association should be strongly allied with those in favor of maintaining a tariff high enough to give us ample protection against the lower labor markets of other countries, and conserve to our own use our home market, the best in the world.

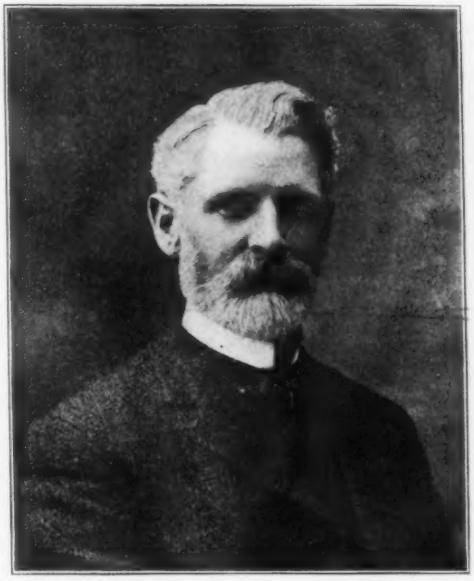
It would seem to me that our association should stamp with its disapproval the agreement which was entered into last summer with Germany by President Roosevelt. While this has, upon its face, the appearance of being of a reciprocity nature a principle which that able statesman James G. Blaine, so strongly advocated, and one which, upon general principles, I also approve, there is so much of a dangerous character in this agreement, that I can see in it a menace to our industry and a cutting away of the very foundations of our tariff system.

This was followed by the reading of the following report of the Secretary, Mr. C. B. Carter:

THE SECRETARY'S REPORT.

Unfortunately, the clouds which have in a measure obscured the prosperity which it has been our good fortune to enjoy for a number of years have not only seriously retarded the association's growth during the past six months, but also in a measure prevented our utilizing certain avenues of usefulness which it is within the province of the association to exert. At the same time the association's influence and the beneficent effect of the wise counsel and good example followed by many of our members has prevented a state of demoralization that without the help of the association would have resulted most disastrously to not only many of our members, but to many hosiery manufacturers who have not as yet seen their way clear to co-operate in the work in which we are engaged. The troublesome times through which we are now passing should cause every thinking hosiery manufacturer to realize the possibilities of co-operative work and the wisdom of forgetting, or, at least, overlooking, many petty grievances or jealousies that for so many years have been prevalent among the hosiery manufacturers of the country.

When the unsettled conditions of last fall began to make themselves strongly felt, hosiery manufacturers over all the country were deluged with cancellations of orders from jobbers whose business acumen was greater than their moral qualities or their sense of right and wrong. The manufacturers who had accepted these orders in good faith, bought material for the necessary goods, manufactured them and had them in stock awaiting shipping instructions, were naturally indignant at this injustice, the more especially as in many instances special labels, bands and boxes had been ordered for the goods, and they could not readily be disposed of to others without a serious less to the manufacturers. It was evident to the jobbers that the trend of prices was downward, and they hoped, if these cancellations were accepted, to again reorder the goods when the market had reached its lowest ebb. Fully appreciating the deplorable state of affairs that would result from the acceptance of these cancellations, the members of the association vigorously resisted every such cancellation of this nature; endeavoring, however, to be fair to the jobbers and offering an extension of time in which to ship and pay for the goods. Such of the buyers as had been most persistent in their demands for cancellations were listed on a bulletin



FRED W. SIMONS, ELECTED PRESIDENT OF THE COMBINED ASSOCIATIONS.

issued by the association and these from time to time were sent out to our members and others, in order that the trade generally might be informed of the character of the men with whom they had to deal. The attitude of our organization resulted in saving many thousands of dollars to our members.

A source of dissatisfaction to many of our members, if not to the entire trade, has been the creation of the new German Agreement which went into effect on July 1, 1907. Innumerable complaints from manufacturers of hosiery, both by letters to this office and to the trade press, voicing their fears of undervaluation, which would prohibit just competition, have arisen, and a strong sentiment towards preventing the ratification of this agreement has grown up since its becoming operative, which will no doubt have due influence upon the next Congress. The attitude of the entire trade is perhaps best expressed in the following article which appeared in one of the textile papers:

"The American public today are better supplied with better merchandise for the money, as regards hosiery, than they have received in the past ten

years. The domestic hosiery manufacturers have put forth their best efforts to give a good wearing article that has been appreciated in every direction.

The Executive Committee made the following report:

THE EXECUTIVE COMMITTEE'S REPORT.

Taking into consideration the trying times of the past year and the natural reluctance of every business man to incur indebtedness, due to the unsettled financial conditions, the growth in our membership is truly gratifying, for in addition to the many new names added to the roll, the character of the mills entered on our books adds distinction to our association. With the bright prospects before us for a prosperous year in the hosiery business, and with the determination to continue our aggressive campaign of education among the non-members as to the merits of this organization, we fully expect that by the time our next convention rolls around we shall have in the neighborhood of 500 members.

The reports from the meetings of the sub-associations, held during the year, show the excellent work the members of these minor bodies have accomplished through the interchange of ideas as to the production of certain lines and their acting in concert in the maintenance of prices for the trade. The attendance at these meetings increases with each one held, and the members are duly enthusiastic over what they have gained and the cheering outlook for the coming season. One of the most important features developed through the meetings of these sub-associations is that of accurate cost finding, a subject that too much importance cannot be attached to, for in it lies the difference between success and failure to make living profits. A valuable paper on this matter has been prepared by Mr. F. W. Simons, which will be read to you in the afternoon session, and from which every member can gain many important points for future guidance.

It is safe to say that there is no one element in business life which more seriously affects every manufacturer than that of cancellation of orders. For years it has been held as the inalienable right of every buyer to freely cancel orders, or, at least, if it was not his right, custom sanctioned the practice, and the fear of loss of future orders compelled every manufacturer to accede to these cancellations, when demanded, with the best grace possible, no matter how much he suffered thereby. As a result of the fright in the business world in the latter part of 1907 and the beginning of this year, with the anticipated lowering of prices as a natural result, hosiery manufacturers throughout the country were deluged with cancellations, based upon various pretexts more or less of a flimsy nature. Had all these cancellations been accepted with the meek spirit of humility characteristic of yore, the consequence to the members of this association would have been disastrous in the extreme, as it would have meant the closing down of mills entirely in many instances, with stocks piled up that could not be disposed of; but foreseeing the dangers of these cancellations, the association determined upon a vigorous stand to resist all unjust cancellations of whatsoever nature, and by rigidly holding to their rights, our members were successful to a remarkable degree in having orders shipped and paid for on time or nearly so. The course the association adopted not only saved many thousands of dollars to the members and placed our organization upon a higher standard in the eyes of all buyers and jobbers, but has also resulted in more clearly defining the rights of a manufacturer in declining to accept cancellations.

Our long continued efforts to secure the purchase of yarns upon a net weight basis have borne fruit at last, and the association has reasons for congratulation in having triumphed in attaining its object in this direction after a long and somewhat bitter struggle. It is hard work, indeed, to eradicate ideas of long standing, irrespective of the question of right or wrong, as the veneration for their age alone endears them strongly to those entertaining them; but when the upsetting of old ideas apparently threatens the loss of a few cents to those directly concerned, it is remarkable how tenaciously they cling to their old opinions and refuse to adopt new ones.

For some years this association has been striving to have the yarn spinners and dealers of the country sell yarns upon a net weight basis, instead of their allowing the knitters 2 per cent. off for the weight of cones and paper; but the spinners and dealers strongly contended that the 2 per cent. discount system was equitable, that the new plan proposed would bring in its train more evils than under the old system, and that they would necessarily have to raise the price of yarns to meet the new conditions. The knitters claimed and proved (many through the use of record sheets and cards issued by the association), that the 2 per cent. allowance did not cover the tare and that there was a loss to them of from 2 to 9 per cent., because of the fact that they paid for cones and paper at yarn prices.

Even after the knitters agreed to pay an increased price per pound for yarn if sold upon the net weight basis, it was exceedingly difficult to secure the consent of the spinners and dealers to furnish supplies upon this basis, but at last it becoming evident to them that the old system must give away to the new to meet new conditions of the trade, many of them agreed to do so, and today we have a sufficient number of spinners and dealers, handling the various grades, willing to sell upon the basis of net weight, to enable our members to buy any quantity and character of yarn desired under the new plan. The names of these concerns have been made known to the members of this organization, who are buying their yarn supplies from them, and it is safe to predict that within a short time there will be but few dealers and spinners in the country from whom yarns cannot be bought upon the net weight basis.

The executive committee has had in mind for some time past the advisability of establishing help bureau in connection with our association. We frequently receive inquiries from members as to whether we can furnish men for various positions, also applications from employes who desire situations in different lines. It would seem that both parties by being brought into communication with each other would be helped and the association would add another useful department to its

work. If this matter meets with the favor of the members, the committee will inaugurate such a bu reau in the near future.

Another question that should be taken up and disposed of is that of adopting a uniform order blank. Many contentions arise through lack of a thorough understanding between buyer and manufacturer as to the exact kind and quality of goods ordered, date of shipment, how to be shipped, terms of order, dating, discount, right of cancellation etc., and the order blanks used by the different mills varying so much in the enumeration of these particulars, we believe that the adoption of a uniform order blank would greatly benefit the members. Copies of such a blank, which it has been believed would cover all the requirements, have been sent out to the members, who by this time are, no doubt, familiar with it, and the committee recommends that this matter be gone over thoroughly and a decision arrived at whether this order blank meets the conditions; if not, to make such changes or additions necessary, and formally adopt it to be used by our association.

The full effects of the German reciprocity tariff agreement upon the hosiery trade of the country have not materialized to that extent as yet that we can accurately judge of its true character. No sufficient statistics have been collected thus far by our association to show clearly the threatened dangers of undervaluation, but as the agreement would not permit of this undervaluation the fact that it has not yet come to light should not lessen our apprehension in the matter. The pressure exerted upon Congress by the different concerns apt to be injured by the passage of this measure must surely be taken note of by our representatives at Washington, and will no doubt do much toward preventing the ratification of the agreement in the next session. Wilbur F. Wakeman, of the American Protective Tariff League, will address you on this subject.

During the past three or four months the American Knit Goods Manufacturers' Association, composed of underwear and other knit goods manufacturers, has been in correspondence with our officers and executive committee relative to uniting their organization with ours, believing that both associations would be benefited by the combination. At the last meeting of the Knit Goods Association held in Reading on April 27, a committee was appointed to confer with our officers and executive committee, discussing more fully this matter and ascertain the views of our members in regard to the proposed union. This conferenc was held last week at the termination of whicl the executive committee decided to lay the question before you. We, therefore, now submit fc your consideration the proposition of combining with our association that of the American Knit Goods Manufacturers' Association.

The constitution and by-laws of both organizations are almost alike, the only changes required in those of both associations to make them uniform being as follows:

Article 1. The name of this association shall be the National Association of Hosiery and Underwear Manufacturers.

Art. 2.—Sec. 1. A permanent organization of the hosiery, underwear and all other knit goods manufacturers of the United States for the purpingly demonstrated when the results achieved by both organizations working in unity manifested pose of promoting more intimate social relations among them, and consequently a more friendly feeling.

Sec. 2. To encourage and promote the commercial interests of the hosiery, underwear and all other knit goods manufacturers of the United States in every way possible.

Sec. 3. To foster and develop plans and conditions, having for their purpose the correction of trade abuses and the advancement of such legislation as will prove mutually beneficial to all hosiery, underwear and all other knit goods manufacturers.

Art. 3.—Sec. 1. The members of this association shall be composed of firms or corporations who are engaged in the manufacture of hosiery, underwear and all other knit goods.

Sec. 2. Any firm or corporation engaged in the manufacture of hosiery, underwear or any other knit goods in such a manner as in the opinion of the executive committee would constitute the concern a legitimate manufacturer of hosiery, underwear or any other knit goods, upon application to the secretary in writing and a two-thirds vote of the executive committee, may become a member of this association upon subscribing to the constitution and by-laws and payment of $10 initiation fee.

Sec. 3. Annual dues. The amount of annual dues shall be upon the basis of $25 per annum, payable in advance. Manufacturers doing a business of less than $50,000 annually are entitled, upon demand, to a rebate of $10.

Art. 4.—Sec. 1. The officers of this association shall consist of a president, two vice presidents, a secretary-treasurer and an executive committee of six. The president and vice presidents shall be ex-officio members of the executive committee, and all shall serve without compensation except the secretary-treasurer, whose compensation and bond shall be fixed by the executive committee.

Sec. 4. The executive committee shall be elected as follows:

Three for a term of one year.

Three for a term of two years.

And successors to them shall be elected at the close of their respective terms of office for a term of two years.

Sec. 6. At least one of the officers and two of the executive committee shall be underwear manufacturers.

An interesting feature of the second day's session was the presentation of a clock to the retiring president, Mr. Rambo, in appreciation of his services to the association. At the afternoon session Wilbur F. Wakeman, secretary of the American Protective Tariff League, delivered an address on the German Tariff Agreement in which he pointed out the damaging effects of that trade arrangement on the hosiery and knit goods industry. His hearers were in complete sympathy with Mr. Wakeman's remarks, as is shown

by the resolutions of the association in condemnation of the German agreement.

The resolutions adopted were as follows:

1. We recommend that each member of this association pledge himself to give preference to yarn manufacturers selling on a net weight basis.
2. We recommend the establishment of a Help Bureau, the association to be paid by the employer an amount equivalent to one week's pay, provided the employe be kept 60 days.
3. We recommend the accompanying order blank to be submitted to the executive committee of the Buyers' Association by a joint committee of our association for their approval or revision; if revised to be ratified or rejected by our executive committee.
4. We recommend the election into our body of the American Knit Goods Manufacturers' Association, with the view of the ultimate consolidation of all knit goods associations; they to be elected on the basis of officers apportioned as submitted by report of executive committee.
5. Whereas the United States Government has entered into a tariff trade agreement with the German Empire, which embodies important customs administrative concessions and of important amendments to the Customs Administrative Act; Resolved, that the National Association of Hosiery and Underwear Manufacturers in annual convention assembled, earnestly protests against the provisions of the German Tariff Agreement, now extended to other countries of the continent, as contrary to law, contrary to policy of protection, injurious to American labor, unfair to the honest importer, demoralizing to the customs service, and in effect a material and indiscriminate reduction in the tariff which should be made only after hearings granted, and then by the legislative branch of the Government; and, Resolved, that the National Association of Hosiery and Underwear Manufacturers thanks the Congress of the United States for not adopting the recommendations of the administration as to amendments to our customs laws; and, Resolved, that copies of these resolutions be forwarded to the President and to each member of Congress.

Following are the papers read at the various sessions:

Trade Associations.

BY FRED W. SIMONS.

I am going to try to discuss "Trade Associations" in the simplest manner I am able to command, but from the broadest standpoint within the limits of my mental capacity. To begin with, I recognize that we are organized for mutual benefit: we are here as business men to promote and protect our own interests as business men. It is probably true, of most of us at any rate, that in the last analysis we are interested in this organization because we hope that in some manner, direct or indirect, it will promote the growth of our own bank accounts. There is nothing wrong in this; all the circumstances considered it is eminently proper; but I hope you will agree with me that the permanent advancement of the interests of any man or any body of men cannot be promoted unless due cognizance be taken of their environment.

Before proceeding to outline any "castles in the air," however, I would like to emphasize the importance of thorough organization and mutual confidence, without which successful co-operation is not possible. I have referred to this subject more than once on previous occasions, and trust you will pardon me for again recurring to it. I should not do so if I did not regard it as vital to the very existence of our association.

Now, the point I wish to make is this: That while as individuals we may frequently misunderstand each other, misjudge each other and mistrust each other, no man can have a reasonable basis for questioning the integrity and honesty of purpose of an association composed of hundreds of representative business men. Therefore, the man who declines to join such an association because he lacks confidence in some of the men composing it, and the men who, being members, fail for the same reason to co-operate frankly and cordially with the association, pursue a policy that is neither far-sighted nor philosophical, and stand in the way of their own interests and of the interests of the trade at large. It is impossible, of course, that every member of the association can place implicit confidence in every other member; probably no one member knows every other member with sufficient intimacy to justify him in going on his bond; but every member ought to be able to place his confidence in the association, and that without doing violence to his prudence and circumspection. When I meet you as individual competitors out on the trade, I dont know very much about you, and try to keep one eye on you and the other on the fellow who is trying to break my prices. But when I meet you collectively, as an association, I would pledge my word for your and would stake my last dollar on your integrity.

Trade associations properly conducted cannot fail to promote the growth of confidence, not only between the individuals composing the various associations, but also between the various associations themselves and between the great industrial and commercial interests they represent. But trade associations can do more than promote the growth of confidence; they can protect it from the attacks of those who for their own personal interests or profit seek to undermine or destroy it. Given thorough organization and pervaded by a spirit of confidence, trade organizations may become one of the most powerful agencies for good that the world has ever known.

I am not here to flatter you, gentlemen, and I am not speaking of our association, but of trade associations in general. Here are large bodies of business men, men of affairs and captains of industry, the men who plan things and direct things and do things, and they are getting together so that they can plan and act in harmony with each other. They are pre-eminently qualified to solve many of the most important problems now confronting the civilized world, and they are unhampered in their deliberations by the presence of any foreign influence, political or otherwise.

History shows that when the political, industrial and social conditions of a country become such that changes of some character become imperative, the situation usually develops a class of re-

formers with programs and platforms so drastic that the proposed remedies are obviously more dangerous than the conditions they are designed to relieve. Fortunately history also shows that where such movements are successful they are followed by reactions, so that while their immediate results may be of doubtful benefit or even of positive hurtfulness, they ultimate in better conditions. It seems to me that the path of progress always lies in "the middle of the road," between two extremes—between the professional thinker and the professional hustler.

The man who does things usually regards the thinker as an impractical theorist. On the other hand, what shall we say of the man who does things—"the hustler?" This much, at any rate, is true; that his physical activity, his mental agility, his tremendous energy, all militate against his profundity. The nature of his genius is opposed to reflection, except as to the best method of accomplishing his immediate purposes. His mission is executive; he has a distinct, well-defined idea of what he wishes to accomplish, and finds in the doing of it a sufficient and satisfactory exercise for all his faculties. But he seldom, if ever, reflects upon the relation his life-work and the doing of it has to the welfare and progress of the human race as a whole.

I am not advocating that trade associations should become political organizations in any such sense as the term is usually applied; but who are better qualified than the business men of the country to pass upon the, wisdom and justice and sanity of the legislation that is to govern it? Who are more interested in good government, and who have greater interests to protect than the business men? The average business man thinks he has no time to devote to politics, and he has not as the political game is now played, but he leaves his interests in the hands of less competent people, and he suffers for his neglect, and the whole country suffers with him. He polls his vote and he knows that his vote counts no more than the vote of any one of his hundred employes, and as a good American he stands ready to admit that it ought not to count for more; but, way down in his heart, he feels that his larger interests, his greater experience and his superior knowledge entitle him to a greater influence and a stronger voice in the direction of the nation's affairs. Then why don't he get it? He can't get it by his individual vote and he can't get it by neglecting the matter and leaving his interests in the hands of others; but he can get it by co-operation.

What interest does the average business man take in proposed legislation? None at all—until it is enacted into law and he finds himself buncoed. But what if business men were properly organized and had competent legislative committees, who reported all important proposed legislation to the associations, who thoroughly analyzed and criticised and discussed it through their association journal and in their meetings-

Take the State of Pennsylvania, for instance. I presume there are not less than ten thousand business men who would be qualified to join trade associations. Would the indorsement or the opposition, the verdict, of such a body count for nothing at Harrisburg? Or, take the entire country—all the trade associations of the United States, themselves members of a national organization which kept a committee at Washington and posted all the associations by means of a periodical with regard to all important pending legislation, and which served as a clearing house to distribute information among all the associations. I have no idea of what the total membership would be, but surely not less than 100,000 men. Think of it, gentlemen, a parliament of 100,000 men, and they the very best qualified men in the world, the very flower of the practical experience of the nation. No legislature that ever was convened would be as competent to pass upon the majority of legislative measures and no legislature would dare to treat with disdain their recommendations or their protests.

What sort of a body would the central organization, the "National Committee of the Trade Associations" be? Assuming as before that the total membership of the associations exceeded 100,000 and that they were represented in the national committee by one representative for every 100 members, we would have over 1,000 representatives. One thousand men, not just ordinary business men, but every man the choice of his colleagues. That would be a very respectable sort of a Senate, I opine. Would any body of men be more competent or less corruptible? The country needs just such a Senate as that to watch the Senate at Washington.

I said that he needs the support of the well informed business men—but are the business men of the country well informed in regard to the methods pursued by the men who roll up tens and hundreds of millions? Can a man make a hundred million honestly? We all know he can't earn it, but can he honestly acquire it? If he cannot do it honestly, we should change the conditions that make it possible for him to do it at all. And if he can do it honestly we should find out how he does it and get into the game ourselves. We want to know. And in order to find out we must associate —we must co-operate—we must pool our brains.

There is no end of problems awaiting solution at the hands of the business man and his trade association—problems that he never thought were his at all. Take, for instance, Socialism and every other ism or its ilk. Think you that Socialism is a political problem, a problem in government? It is nothing of the kind. Socialism is a business problem and only the business men of the world can solve it. Every crazy theory is based upon a perverted truth, a truth turned upside down and inside out, and Socialism is based upon the truth that "the laborer is worthy of his hire." It is when the laborer can't get his hire that he becomes susceptible to inoculation by poisonous theories—Socialism and Anarchism and what not. When you get thousands of unemployed, half-starved men in your great centers of population, it is easy for the demagogue to make converts to the doctrine that the "world owes them a living" and that "all wealth is the product of labor," and, therefore, as they have always labored—when they could get work to do—they are entitled to a share of the world's accumulated wealth.

Cancellations.

BY F. L. CHIPMAN.

"Please cancel the balance of our order, and oblige."

"Cancel all goods on order for us. Yours truly."

"It is now the 10th of January and no bill for goods ordered to be shipped the 1st. Cancel order."

"We are overstocked on hosiery and must ask you to cancel balance of our order. Thanking you in advance, we beg to remain."

The above quotations are very familiar to all of us, and have long since side-tracked the pleadings of one year ago, when some of our customers promised all kinds of things in the shape of appreciation if we would only ship their goods which we were making at the time at an almost indiscernible profit.

Cancellations of orders on a manufacturer is one of the most serious problems that confronts him, and it invariably subjects him to serious loss and more serious inconvenience; the expense and trouble of preparing the goods, preparing travelers samples, contracting for yarns, bands, labels, stamps, etc., have all been incurred, leaving him without orders at a time when there are no buyers, while orders offered many times by good customers have had to be turned down because the manufacturers had sufficient business to engage his machinery and refused these orders in order to protect customers that afterward cancelled them without cause. This has been true with almost every hosiery manufacturer during the past year, and it certainly is unfair to find our machines idle because of cancellations, when we could have taken more than enough business to allow for these cancellations.

Buyers do not see this side of the argument when they cancel either justly or unjustly, and in most cases if these facts are presented to them a satisfactory adjustment can be made, provided, however, the mill receiving the cancellation has been reasonably fair to their side of previous contracts. When the buyer requests a cancellation it does not always mean that he will insist on it, and that he even expects you to accept it, and if the question of right to cancel is properly presented to him the order can oftentimes be maintained. There is no denying the fact that the delivery of poor merchandise and the failure to deliver goods purchased at or near the date of agreed delivery causes our customers an equally serious loss, and these facts no doubt make a buyer justify himself even if this treatment be handed to him by a different mill than the one he cancels the order with.

Taken as a whole, there is no finer, more honorable and fairer body of men visiting the New York market than the buyers of hosiery. And my experience has been that when a demand that appears unjust has been made, in most instances, after a representation of the true facts of the case, proper treatment is received. We must bear in mind that the fountain-head from which these cancellations come, in many instances, is not the man that purchased the goods, but the financial head of the house, and the pressure that has been brought upon buyers the last six months to get out of contracts by employers has been far in excess of anything that we can conceive of.

I do not believe that it is within the province of this association to prevent the unjust cancellation of orders; concerted action of members and of the association, with the help of our secretary can, however, be of a powerful influence toward obtaining fair treatment. It is, however, a matter that must be handled individually by buyer and seller. If the buyer has a just reason for canceling, there is but one thing to do, and that is to accept the cancellation. If the cancellation is, in your opinion, unjust or unwarranted, the fact should be put squarely before him and the cancellation refused, and if he still insists on the cancellation, there is but one thing to do, and that is to accept it. Unless you want a lawsuit and not sell him again, it is not fair to the man who does treat you right to keep offering your merchandise to his dishonest competitor. In this event I would recommend the following action: in no case accept further business from him until satisfactory adjustment is made. Report the true facts to the secretary of this association, he to write the offending buyer, setting forth your complaint, giving your name and asking him for an explanation, his reply to be sent to you by the secretary and all the correspondence kept and used for an information bureau for the benefit of our members.

I am strongly opposed to the present system of reporting unjust treatment without advising the party reported and giving him the name of the member reporting him. In this connection I advise the discontinuance of our present reporting sheet. Accusations of this kind should not be made unless you are willing to back it up with your name.

If we, one and all, would adhere strictly to this policy, unjust cancellations would soon be a thing of the past, as the buyers that insist on actions of this kind are in a small minority and always the small and unsatisfactory trade, and they would soon find what a great disadvantage they would have as compared with their competitors who are fair and accord just as good treatment as they receive.

The manufacturers have, in consequence of the complete demoralization of our business on account of hold-ups, cancellations, etc., been compelled to hold up deliveries on supplies and do like our customers have done in some instances—cancel orders that have not been properly executed. The spinners receiving these cancellations and hold-ups in some instances have forgotten the treatment which they gave us last summer in the shape of deliveries, and the quality of yarns that were delivered on contracts, and there is no doubt that they feel just as we do when we receive hold-ups and cancellations, and that they think they have been unjustly treated, and there is no doubt that in some cases they have been. But the knitter has ten of these "lemons" given him where the spinner has had one, and I believe the jobber has had a thousand where the knitter has had ten, and so we do well to consider both sides and the conditions which confront us at the time these contentions arise.

I think you will agree with me that the spirit of helping one another is the only thing that prevented very disastrous results during the past six months; jobbers carrying the retailers, and are doing it yet, manufacturers carrying the jobbers in the shape of accounts and extending deliveries to the limit of their ability, and the men were equally fair to the knitters in most instances. There have, however, been some exceptions in which absolutely no deviation would be allowed from the

strict form of contract. There is no question but that the stand taken by these people was right legally, but if everybody in the trade had handled their customers in the manner that some have done there would have been many of us driven to the wall. The courtesies which have been extended to us as knitters will not be forgotten, nor will the parties who showed no disposition to help be soon forgiven. One man was heard to say he was not in the business to make money, but for the pleasure of holding people to their contracts and make them do business the way he wanted it done. He succeeded in some cases. He, however, has not learned one of the golden rules of life, and that is to have happiness with success you must always use helpfulness.

In concluding let me entreat you to have individual courage to stand for your rights, to turn an order down from whom unfair treatment has been received, at the same time minimize friction and create harmony by displaying courtesy and self-control.

The German Agreement Analyzed.

BY HON. WILBUR F. WAKEMAN.

When I appeared before you in May, 1007, and explained to you the effect of the German trade agreement, now extended to all nations on the continent, you did not all believe me. After your meeting one of the members of this association came to me and said: "I am a member of the American Protective Tariff League, and I am inclined to resign from that organization because of what you have said. The output of my plant is sold up to July 1, 1908." I wonder if the same gentleman can make a statement to you or me that his output is sold until July 1, 1909. I think not.

President McKinley said to John P. Young, of San Francisco, a few days before he died:

"I regard the rigid enforcement of the provisions of the administrative act as being the chief buttress of the protective system."

The development of the German agreement started with the Cuban treaty, adopted in 1903, and "alleged persecutions" of certain German citizens who were large importers at the port of New York. The German empire called the attention of our Government to the commercial treaty with Prussia of 1828, and insisted upon conditions practically similar to those extended to Cuba. This went hand in hand with the "alleged persecutions" of certain German importers which resulted in a feeling on the part of our administration that "something must be done." Familiar as I am with customs administrations, I can say that these "alleged persecutions" did not exist, and the charge was simply a part of the plan to force a relaxation of our laws.

At the same time Germany insisted that "something must be done," or the maximum tariffs of the German Empire would be assessed against American products entering Germany. The clever and capable German Ambassador, aided by foreign shipping interests, importers and advocates of alleged reciprocity, prevailed.

As already stated, the Administration was convinced that "something must be done;" but it did not have to be done, as proved by the following quotation from section 5 of what is known as the Meat Inspection Act of 1890.

"That whenever the President shall be satisfied that unjust discriminations are made by or under the authority of any foreign State against any product of the United States, he may direct that such products of such foreign State so discriminating against any product of the United States as he may deem proper shall be excluded from importation to the United States, and in such case he shall make proclamation of his direction in the premises, and therein name the time when such directions against importations shall take effect, and after such date the importation of the articles named in such proclamation shall be unlawful.

"The President may at any time revoke, modify or renew any such direction as in his opinion the public interest may require."

In reference to the agreement as a whole, I have not found a single producer, Congressman, or Senator who was consulted as to its effect before promulgation, or any legal authority which confirms its legality. A high official was recently asked why industrials were not consulted. His answer was in effect that if industrials had been consulted "there never would have been an end to it," the agreement. The agreement was negotiated in secret, framed in official circles, and after signature forwarded and submitted to the Economic Association of Germany, approved by the Reichstag, and then signed by the Emperor. Indeed the first semi-official knowledge of its contents came to us by cable through German sources.

I have carefully analyzed and studied the German Agreement since its promulgation and find that it must be treated under three heads:

First. The administrative features, changing the rules and regulations of the Treasury and State Departments, which in effect nullify important sections of our Customs Administrative act.

Second. It recommends important legislative changes in the Customs Administrative act which, in the judgment of customs experts, would destroy the efficiency of the act, and open the door for vastly increased undervaluations of imported merchandise.

Third. A comprehensive commercial treaty which is promised by the agreement. We are informed that this commercial treaty has been negotiated, and that it prescribes a reduction of American duties amounting to about 20 per cent. on competitive merchandise.

Now, regarding the first section, namely, administrative features and modifications of the rules and regulations, we have claimed and now claim that these changes amount to a nullification of sections 19 and 11 of the Administrative act, and of sections of the revised statutes affecting the duties of United States Consuls.

Now, as to the effect of the administrative changes now under consideration. As a matter of fact our imports from Germany have increased steadily since the agreement went into effect, namely, July 1, 1907, especially merchandise competitive with American products and merchandise affected by an ad valorem tariff. Naturally this agreement could not change the rates of duty, but it has opened the door to undervaluation by the method of ascertainment of market value, established by paragraph A of the agreement. To

illustrate: From private and semi-official sources I quote the exports from one consular district to the United States for July, August and September, 1906, compared with 1907, as follows:

	1906.	1907.
Artificial flowers	$99,944.75	$197,284.50
China and earthenware	59,400.25	353,295.25
Lithographic prints	102,746.50	144,585.25

Referring to your own line let me quote the effect of this agreement as to the imports of cotton knit goods as follows:

	Nine months ending March.	
	1907.	1908.
Imports:		
Knit goods, cotton	$6,084,655	$7,382,085

I am informed that hosiery is included in this item on knit goods including labels.

Is it not surprising that during the period since July 1 of last year you should have an increase o the importation of foreign merchandise in your line amounting to over $1,300,000?

There has been no increase of imports from Germany or other countries where specific rates of duty apply but all of the increases have applied to compound and ad valorem and competitive goods. To illustrate: Take the article of cement, which bears a specific rate, and the imports from Germany have dropped 247,000,000 pounds in the six months ending December 31, 1906; to 149,000,000 pounds for the six months ending December 31, 1907. The same is true of other merchandise affected by a specific tariff.

We have received many criticisms of Congress for not having taken up the administrative changes, executive orders, etc., affecting the importation of foreign merchandise. The Congress of the United States was not permitted to have any official knowledge of the terms of the agreement, its consummation and promulgation, but when the administration recommended legislation providing for important modification of the administrative act the Congress had full knowledge.

You ought to feel deeply grateful to the Ways and Means Committee of the House of Representatives for what it has not done. Let me illustrate: One of the recommendations of the Administration was that no penalty should apply until the undervaluation had been established for more than 10 per cent. You and I know that an undervaluation of 9 per cent. will control the American market. That is simply one of the recommendations made by the Administration. If the present administrative features now in effect and legislative changes in harmony with the recommendations of Mr. Roosevelt had been made and carried into effect by legislation many of you would not be in business today.

The legislation recommended has not been acted upon by Congress, and I feel that before this convention adjourns it ought to pass a resolution of thanks to the Congress of the United States for not adopting the legislation recommended.

A paper on "Testing Knitting Yarns" was read by Robert J. Hoguet, New York.

THE EXHIBITION.

The exhibition held in connection with the convention lasted during the entire week and was the center of attraction when the executive meetings were not in session. It was pronounced by all to be the best exhibition of knitting machinery ever held, and the exhibitors generally expressed themselves satisfied with the results. Far greater interest was taken by Philadelphia manufacturers than in any previous gathering, and not only the manufacturers but many operatives from city mills were interested visitors, and were keen in the appreciation of the improved machines and devices demonstrated in actual operation.

Secretary Carter received and deserved the congratulations of the members of the association, and the exhibitors, on the success of the exhibition and the convention, which involves a great amount of planning and systematic work. The experience gained each year helps to make each succeeding convention better.

In our last issue we published the diagram of the hall and a description of the different exhibits, with the exception of a few later ones which were only installed at the last moment.

Among the later exhibits at the Hosiery Convention not mentioned in account published last month is that of the Tolhurst Machine Works of Troy, N. Y., who showed a perfect model of their hydro-extractor which demonstrated just what the large machine would do under varying conditions. The Tolhurst extractors are built for belt drive, engine drive or motor drive. In the design of the engine and motor drive, economy, efficiency and durability have been studied, and a high point of perfection attained. Their engine driven extractor is claimed to be the only machine of its kind having a speed governor. The motor driven extractor has the motor detached from the basket spindle, so that none of the attending vibration is transmitted to the motor, and thus the great cause of trouble with this type is removed. F. A. Tolhurst, the New York representative, was in attendance.

Messrs. Ellis Bros., the well known jobbers of hosiery, underwear and knit goods at 533

Market St., were represented at the exhibition by both members of the firm, Abe & Cain, in a space which they had fitted up in a comfortable manner for the members of the Association visiting the exhibition hall.

The Philadelphia Textile Chemical Works of Frankford exhibited a line of scouring, bleaching and silk soaps; also Queen olive oil, white and palm softeners and British scouring salts, with many other specialties for the textile trade. They report having closed a number of good orders and interested many manufacturers in their line.

The Reece Button-hole Machine Co. of Boston exhibited at space No. 44. Their new automatic machine for cutting and working eyelets for underwear and other garments attracted attention, and the leading feature of their exhibit was their machine for working double barred button-holes. It cuts and stitches button-holes without eyelets ranging from one-quarter inch to one inch. It is a single thread machine with large production, giving the elastic stitch. The machine is automatic and simple and attracted much favorable comment.

The following is a list of the new members who have joined the association during the past year:

NEW MEMBERS.

Rockwood Mills, Rockwood, Tenn.; Thos. H. Adcock, Pottsville, Pa.; Shamrock Hosiery Mills Co., Winston-Salem, N. C.; Rocky Mount Hosiery Co., Rocky Mount, N. C.; Edw. P. Jones, Bristol, Tenn.; Robt. Meyer, 3961 N. 5th St., Philadelphia, Pa.; Ashley Mfg. Co., Newberry, S. C.; National Knitting Co., Milwaukee, Wis.; Chicago Hosiery Co., Detroit, Mich.; E. Sutro & Son Co., E. Thompson and Clearfield, Philadelphia, Pa.; Blood Mfg. Co., Jasper and Thayer Sts., Philadelphia, Pa.; Liberty Bell Hosiery Mills, 4318 Frankford Ave., Philadelphia, Pa.; Roxboro Hosiery Mills, 2731 N. 6th St., Philadelphia, Pa.; Woodcock & Kinzel, Germantown, Philadelphia, Pa.; J. W. Heckman, Shoemakersville, Pa.; Hamburg Hosiery Mills, Hamburg, Pa.; Harry Halm, Reading, Pa.

Gloss Knitting Mills, Reading, Pa.; Austin Knitting Mills, So. Bethlehem, Pa.; Consolidated Knitting & Spinning Co., Reading, Pa.; Shillington Hosiery Mills, Shillington, Pa.; W. B. Beyer & Son, Birdsboro, Pa.; Fussner Hosiery Mills, 2411 Howard St., Philadelphia, Pa.; Central Knitting Mills Co., Reading, Pa.; Beaver Knitting Mills, Nanticoke, Pa.; Regina Hosiery Mfg. Co., Haw River, N. C.; Maybaum Mfg. Co., 2246 N. 9th St., Philadelphia, Pa.; Geo. H. Tilton & Son, Tilton, N. H.; R. F. Moyer & Co., Macungie, Pa.; E. G. Chester Hosiery Co., Philadelphia, Pa.; Scotland Neck Cotton Mills, Scotland Neck, N. C.; Western Penitentiary of Pennsylvania, Pittsburg, Pa.; Wilson & Dawson, Tarboro, N. C.; Brown-Moore Hosiery Co., Philadelphia, Pa.; Wisdon Hosiery Mills, Paducah, Ky.; Frankford Hosiery Mills Co., Frankford, Pa.

The meeting of the American Knit Goods Manufacturers' Association was held at the Continental Hotel, Philadelphia, on May 14, 1908, and was made noteworthy by the adoption of a resolution in favor of uniting the Association with the National Association of Hosiery Manufacturers under the name of the National Association of Hosiery and Underwear Manufacturers.

Those present were as follows:

W. Godey Ellis, W. Godey Ellis Company, Philadelphia, Pa.

Reinhard Huettig, German-American Hosiery Co., Philadelphia, Pa.

Chas. F. Hetrick and W. A. Hetrick, W. A. Hetrick & Bro., Philadelphia, Pa.

Rowland Hunt, Rowland Hunt, Philadelphia, Pa.

Ed. P. McCabe, Hygienic Fleeced Underwear Co., Philadelphia, Pa.

J. W. Landenberger, J. W. Landenberger & Co., Philadelphia, Pa.

M. B. Laubach, M. B. Laubach, Philadelphia, Pa.

Geo. B. Pfingst, Lee Hosiery Mills, Philadelphia, Pa.

Jas. A. O'Connell and John J. Torpey, Marion Hosiery Mills, Philadelphia, Pa.

H. E. Ashmore, Melbourne Knitting Mills, Philadelphia, Pa.

Robert Meyer, Robert Meyer Co., Philadelphia, Pa.

John L. Johnson, Union Mfg. Co., Frederick, Md.

J. O. Wells, Cooper, Wells & Co., St. Joseph, Mich.

Geo. E. Frink, Geo. G. Guenther, Reading, Pa.

A. S. Hornberger, Mohnton Knitting Mill, Mohnton, Pa.

L. B. Conway, Jr., Danville Knitting Mills, Danville, Va.

F. A. Weiss, Nelston Manufacturing Company, Levee City, Tenn.

Isaac Mossop, Isaac Mossop & Co., Wiconisco, Pa.

Robert L. Seidel, Maidencreek Hosiery Co., Temple, Pa.

Henry B. Freed, M. B. Bergey & Co., Souderton, Pa.

J. W. Heckman, Shoemakersville Hosiery Mill, Shoemakersville, Pa.

D. K. High, Robesonia Knitting Mills, Robesonia, Pa.

A. E. Vaughn, The Vaughn Knitting Co., Pottstown, Pa.

A. J. W. Baker, Metropolitan Knitting Mills, Reading, Pa.

J. G. Kuersten, Kuersten & Rick, Reading, Pa.

Geo. W. Hawk, Reading, Pa.
F. W. Hanold, Hampden Knitting Mills, Reading, Pa.
Thos. H. Adcock, Pottsville, Pa.
John B. Barker, Clark & Barker, Philadelphia.
Thos. Ballantyne, John Ballantyne & Sons, Philadelphia.
Alexander Ballantyne, John Ballantyne & Sons, Philadelphia.
Globe Knitting Works, Grand Rapids, Mich.
Alban Spooner, Beverly Underwear Co., Beverly, N. J.
W. H. Diefenderfer, Auburn Knitting Mills, Auburn, Pa.
S. D. Bausher, Gotham Underwear Mills, Hamburg, Pa.
Hamburg Knitting Mills, Hamburg, Pa.
H. W. Jacobs, Hazle Knitting Mill Co., Hazleton, Pa.
T. J. Whittaker, Hazle Ktg. Mill Co., Hazleton, Pa.
Keystone Underwear Co., Lititz, Pa
John Rems, Macungie Knitting Mill, Macungie, Pa.
Jas. H. Wagner, Crown Knitting Mill, Mohrsville, Pa.
A. S. Hornberger, Mohnton Knitting Mills, Mohnton, Pa.
J. A. Scharadin, Orwigsburg Knitting Mills, Orwigsburg, Pa.
Harry G. Querns, Querns Bros., Philadelphia.
Joseph Feldenheimer, Roxford Knitting Co., Philadelphia.
Herman Schloss, Roxford Knitting Co., Philadelphia.
William S. Lloyd, Stratford Knitting Mills, Philadelphia.
J. E. Stanton, Champion Knitting Mills, Schuylkill Haven, Pa.
J. C. Lautenbacher, Enterprise Knitting Mills, Schuylkill Haven, Pa.
L. McWilliams, McWilliams Bros., Schuylkill Haven, Pa.
John D. Berger, Spring Garden Knitting Mills, Schuylkill Haven, Pa.
A. H. Kline, Standard Knitting Mills, Schuylkill Haven, Pa.
F. E. Ammerman, Shamokin Underwear Mills Shamokin, Pa.
Ira D. Latshaw, National Underwear Co., Spring City, Pa.
H. T. Rollins, Des Moines (Ia.), Hosiery Mills.
A. W. McLellan, Alden Mills, New Orleans, La.
S. H. Weihenmayer, Blue Ridge Knitting Company, Hagerstown, Md.
J. Irvin Bitner and H. J. Crosson, Windsor Knitting Mills, Hagerstown, Md.
Earl A. Thissell, Lowell (Mass.), Hosiery Co.
Chicago Hosiery Company, Detroit, Mich.
David Cottrell, Hammonton, N. J.
J. A. Groves, Wiscassett Mills Company, Albemarle, N. C.
J. M. Browning, Daisy Hosiery Mills, Burlington, N. C.
C. M. Carr, Durham (N. C.) Hosiery Mills.
Geo. F. Seyfert, Elizabeth City (N. C.) Hosiery Company.
J. H. Adams and J. E. Millis, High Point (N. C.) Hosiery Mills.
D. J. Carpenter, Newton (N. C.) Hosiery Mills.
Ernest Martin, Martin Hosiery Mills, Raleigh, N. C.
D. L. Rosenau, Rosenau Hosiery Mills, Tuscaloosa, Ala.
E. P. Dismukes, Georgia Manufacturing Company, Columbus, Ga.
John H. Barnes, Marietta (Ga.) Knitting Mills.
H. R. Berry.
H. G. Smith, Penman's, Ltd., Canada.
Geo. Kramer, Brownhill & Kramer, Philadelphia.
A. N. Shusto, Allegheny Hosiery Mills, Philadelphia.
Albert Walker, Reliable Hosiery Co., Philadelphia.
J. J. Campbell, West Branch Knitting Co., Milton, Pa.
Jas. K. Loore, Reading, Pa.
W. C. Mohn, Mohn Bros., Adamstown, Pa.
F. L. Serdel, Colonial Hosiery Mill, Reading, Pa.
W. B. Serder, Pioneer Hosiery Mill, Reading, Pa.
C. S. Seidel, Maidencreek Hosiery Co., Temple, Pa.
S. S. Miller, Reading, Pa.
Lawrence Neebe, Boston.
E. H. Ludwig, Wisconsin Knitting Co., Manitowoc, Wis.
Jas. H. Craugham, Craugham Knitting Co., Phladelpha.
A. W. Wells, Cooper, Wells & Co., St. Joseph, Mich.
J. A. Lichty, Crystal Hosiery Mill Co., York, Pa.
C. E. Doughty, Georgia Mfg. Co., Columbus, Ga.
Wm. W. Banks, Grantville Hosiery Mills, Grantville, Ga.
Henry Wurst, Fay Stocking Co., Elyria, O.
L. C. Vaughn, Blue Ridge Knitting Co., New York.
D. L. Galbraith, World's Star Knitting Co., Bay City, Mich.
Geo. W. Malick, Lyon Knitting Mill, Herndon, Pa.
Mrs. G. T. Andrews, Rocky Mt. (N. C.) Mfg. Co.
J. A. Cline, Hickory (N. C.) Hosiery Mills.
Thos. C. Russell, Rowland Hunt, Philadelphia.
A. L. Fitler, Frankford Hosiery Mill Co., Philadelphia.
Chas. P. Thornly, Smyrna, Del.
Robt. E. P. Suit, Berwick (Pa.) Hosiery Mills.
John G. Martin, M. B. Fanbach, Philadelphia.
G. A. Rumpf, Jr., National Hosiery Co., Philadelphia.
William A. Derk, Bell Hosiery Co., Philadelphia.
Lewis E. Drake, Drake's Knitting Mill, Dorroceton, Pa.
M. H. Davis, Falconer (N. Y.) Knitting Co.
John Johnston, Allegheny Hosiery Mill, Philadelphia.
Charles Barger, Barger, Bains & Munn, Philadelphia.
Oliver Wilson, Wilson & Co., Bethlehem, Pa.
J. Fred Lieberman, The Bee Ktg. Co., Philadelphia.
George Sassman, Allegheny Hosiery Mill, Philadelphia.
Harry Bohler, Reber Ktg. Mills, Pittsville, Pa.

David Lowenstein, Union Mfg. Co., Frederick, Md.
L. W. Maybaum, Maybaum Mfg. Co., Philadelphia.

UNDERWEAR MANUFACTURERS PRESENT.

J. C. Collier, Oxford Knitting Mills, Barnesville, Ga.
Rome (Ga.) Hosiery Mills.
Garnett Andrews, Richmond Hosiery Mills, Chattanooga, Tenn.
Harold Lamb, Union Manufacturing Company, Union Point, Ga.
W. A. Hedden, New Albany (Ind.) Hosiery Mills.
Geo. T. Andrews, Rocky Mt. (N. C.) Hosiery Company.
Wilson & Dawson, Tarboro, N. C.
The Tryon (N. C.) Hosiery Company.
P. K. Green, Carolina Mills Co., Winston-Salem, N. C.
W. L. Fay, The Fay Stocking Co., Elyria, Ohio.
A. R. Kreider, A. R. Kreider & Bro., Annville, Pa.
Bernard L. Kutz, Kutz Knitting Mills, Bechtelsville, Pa.
Frank T. McElroy and J. Beatly McElroy, Valley Hosiery Co., Boiling Springs, Pa.
R. B. Nelson, The Chambersburg (Pa.) Hosiery Company.
M. S. Gabriel, Gabriel Hosiery Co., Coopersburg, Pa.
Danville (Pa.) Hosiery Mills.
Charles Chipman, Chas. Chipman's Sons, Easton, Pa.
James L. Merkel, Hamburg (Pa.) Hosiery Mills.
Harry R. Fisher, Jno. R. Fisher, Lykens, Pa.
H. H. Shenk, Manheim (Pa.) Hosiery Mills Company.
Edward Hecht, West Branch Knitting Company, Milton, Pa.
Joseph West, Black Diamond Knitting Mills, Nanticoke, Pa.
M. H. Kessler, Nazareth (Pa.) Knitting Mills.
Harry C. Aberle, Harry C. Aberle & Co., Philadelphia, Pa.
Robert Johnston, Allegheny Hosiery Mills, Philadelphia, Pa.
Harry A. Brownhill, Brownhill & Kramer, Philadelphia, Pa.
Thos. W. Buck, Thos. W. Buck Hosiery Co., Philadelphia, Pa.
E. G. Chester, E. G. Chester Hosiery Company, Philadelphia, Pa.

The election of officers resulted as follows:

President, Frederick W. Simons, of Simons & Strue, Frankford; first vice president, Park Moore, of the Brown-Moore Hosiery Company; second vice president, H. S. Weihenmayer, of the Blue Ridge Knitting Company, Hagerstown, Md., and secretary and treasurer, C. B. Carter; executive committee, Ernest Blood, Sr., of John Blood & Bro.; George B. Pfingst, of the Lee Hosiery Mills; Julian S. Carr, Jr., of the Durham Hosiery Mills, Durham, N. C.; Earl Thissell, of the Lowell Hosiery Company, Lowell, Mass.; W. H. Diefenderfer, of the Auburn Knitting Mills, Auburn, Pa., and Garnett Andrews, of the Richmond Hosiery Mills, Chattanooga, Tenn.

A THREAD GUIDE FOR SPINNING FRAMES.

A thread guide, invented in England and recently patented in this country, is described by the inventor as follows: The object of this guide, which is specially adapted for cap frames, is to prevent ballooning and the fraying of the thread during

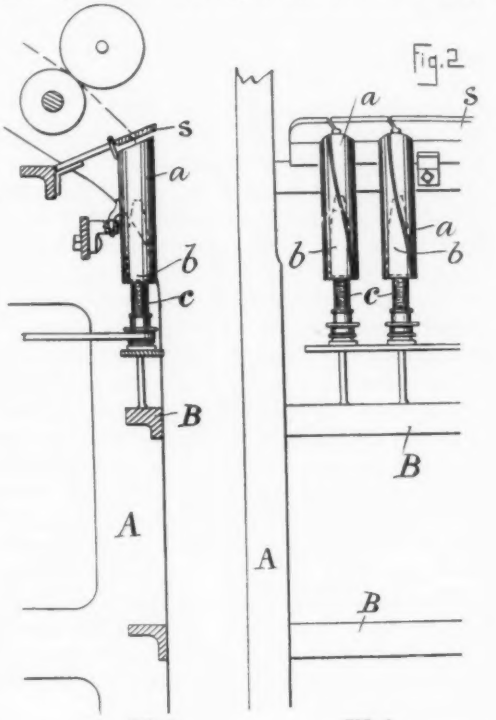


FIG. 1. FIG. 2.

the process of spinning. Fig. 1 is an end elevation of a frame equipped with the device; Fig. 2, a front elevation.

The shields, a, mounted and held against rotation are made preferably of steel, formed so as to surround the caps, b, shown in broken lines Figs. 1 and 2, of the cap spinning frame so that the yarn is wound upon the bobbins, c, by passing through these shields, a. The inner surfaces of the shields are made smooth and even throughout and come into comparatively close proximity to the thread guides, s, so that from leaving said guides until reaching the bobbin they are retained within the shields. Ballooning of the thread is thus prevented.

THE MARKET VALUE OF TEXTILE MACHINERY.

BY APPRAISER.

The two most important things which determine the market value of machinery are:

First, its comparative ability to turn out a product in quantity and quality equal to that of the most improved machines.

Second, its actual condition with respect to wear and tear.

In a discussion of the influence of these two factors in the case of textile machinery, Mr. Charles T. Main, of Boston, the well-known mill engineer says that:

"Although a machine may not be worn out, or even may have been run but very little, it may be unprofitable to run, because other machines have been introduced which do so much more or much better work. These machines may be used to advantage in some other concern, and may on this account have more value than scrap. Parts of machines have been improved so that these portions may be changed while leaving a portion of the machine as before; as for example, cotton-spinning spindles, so that depreciation might be applied to a portion of a machine instead of to the machines as a whole.

"The depreciation for actual wear and tear will vary with the severity of the work done, speed of the moving parts, the care taken in the running, and the amount laid out in repairs.

"It seems to me impossible to separate the depreciation from wear and tear altogether from that due to improvements in arriving at its present value, and it is customary to treat them in a general way, allowing a definite depreciation to cover both.

"Any concern which does not lay aside at least five per cent. of the total value of its plant if new, and apply the same at intervals towards the renewal and improvements, will find itself at the end of twenty years in a position not able to compete with success with modern equipped concerns, and it will be necessary to make radical changes at great expense, calling for new capital.

"It is often stated that there is no depreciation during the first year of running; that the machinery will do better work after it is limbered up and adjusted than when it is set to work. As a matter of fact, depreciation does begin immediately, although not perceptible. After the first year, depreciation is charged sometimes at a uniform rate of five per cent. over all the machinery, due allowance being made for any renewal of parts outside of ordinary repairs. I have used in several cases a depreciation of five per cent. up to the dressing-room, and four per cent. for the dressing-room and beyond. This view has been presented to me by a member of the society, that after the first year the depreciation should be marked off five per cent. to ten per cent. a year until the value is brought down to one-half the original cost; then to maintain its value about level for a while, until it becomes apparent that it would soon be profitable to replace the machinery, when the depreciation goes on at a more rapid rate. This method may be proper for a mill to pursue in its own book-keeping, but it is not quite definite enough in making up a valuation for purchase, etc.

"It is sometimes the case that some of the machinery is older than these rates would allow them to be in existence, but they may be still there, perhaps for the same reason that the bridge remained which the engineer had figured could not hold up its load. When asked how he explained the fact that it did stand up, he said that the only reason that he could give was that it stood from force of habit. Some machines remain and do work long after it would be profitable to replace them. The value of such machinery to a purchaser is practically nothing, except that it may complete the organization of the mill and allow it to run until it can be replaced by new machinery.

"If a sinking fund is created for replacing the machinery, three per cent. of the cost would replace it in twenty-four years. There is usually some value to machinery in a mill, even if the property were to be dismantled; but old machinery has no value except for scrap, which is very small, as the cost of taking down is about as much as the value of the scrap."

IN GERMANY.

From a report Special U. S. Gov. Agent W. A. Graham Clark

The most important cotton mill in Germany, also the best paying, as shown by its published dividends, is the Augsburg Mechanische Baumwoll Spinnerei und Weberei at Augsburg, in Bavaria. This mill has 126,940 spindles running on average No. 17s English, and 2,920 looms, of which 520 are on bleached goods, especially printers, and 2,400 on heavy gray goods. It employs some 3,000 operatives, and its annual pay roll amounts to about $450,000. Water power is used, with supplementary steam power. It uses nearly 30,000 bales of cotton and produces some 12,000,000 pounds of yarn and 30,000,000 yards of cloth yearly. The mill was founded in 1837, and its capital stock is now 3,600,000 marks ($856,800), while its 4 per cent. bonded indebtedness is 500,000 marks ($119,000). The mill has a large reserve fund, and a special sinking fund, and has 200,000 marks ($57,600) reserved for the pension and relief of employes. The dividends distributed by this mill to its stockholders for the seven years ended with 1906 were, in consecutive order, 20.4, 14.6, 16, 23.5, 17.5, 23.5, and 28 per cent., or 143.5 per cent. in the seven years.

THE LABOR QUESTION.

Heating and ventilation in this mill is carried on by means of flues built in the wall, the air going up the flues on one side and being drawn down to the basement again through the flues on the other side. Separate dressing rooms with clothes lockers are provided for the men and women on each floor. There is also provided a large hall with tables and chairs where the operatives can eat their lunches. Coffee and milk is sold in the morning, hot soup at noon, and beer at 4 o'clock. A demi-liter (about a pint) of coffee with milk is sold at 7 pfennigs (1.67 cents); a portion of soup with vegetables and, occasionally, with meat, is sold for 30 pfennigs (7.14 cents), and beer sells for 20 pfennigs (4.8 cents) a liter (1.05 quarts). This is almost cost price, and any profit over expenses goes to the workers' pension fund. Operatives are lodged partly in tenement houses and partly in cottages. A lodging of three rooms and a kitchen rents for 100 to 140 marks ($23.80 to $33.32) a year. Until 1906 this mill ran an 11-hour day, but it then changed to 10 hours.

This 9.1 per cent. decrease in time was allowed by a 7.85 per cent. decrease in production In regard to wages at this mill, the picker room hands and the carders get 50 to 70 cents a day; on two 900 self-actor mules the spinner averages about 90 cents a day, the piecer 71 cents, and each of the two creelers 35 cents a day. Weavers, on an average, run three looms apiece, and make about 80 cents a day; 170 of the looms have the Northrop attachment. At this mill a man is supposed to serve a two-years' apprenticeship before he can do as simple work as that of running three looms on plain goods He has to sign a two-years' contract to this effect. He first works as extra assistant to a weaver for six months, then he is given one loom, which is run under the supervision of the regular weaver, who receives a certain percentage on the wages made. Then he is given two looms under the same conditions, and it is not until the new weaver has been working for two years that he is considered a full-fledged weaver and allowed to enjoy the fruits of his labor without division. During the first six months the mill usually pays the apprentice 24 cents a day.

DOUBTFUL RESULT OF THE APPRENTICESHIP SYSTEM.

After all this elaborate apprenticeship system it is doubtful if the weaver is as good as the young American weaver who comes in from the farm and in a few months at most is getting off the required production along with the others. All fines and penalties are paid to a sick fund. Besides the regular government insurance, this mill has special insurance funds of its own for the relief of the sick, for old age and invalid pensions, for the relief of widows, etc.

The pension fund of this mill provides a pension after 20 years of service equal to 30 per cent. of the annual wages; this is augmented 2 per cent. every year up to 40 years' service, when it is 70 per cent. It is then augmented 3 per cent. per year up to 50

sion equal to his regular wages. Except in special cases a worker is not accorded a pension until he has reached the age of 50 years.

By means of the two years' apprentice contract for weavers, and by means of the old age and other pensions for long service, this mill offers all inducements possible to insure the worker remaining at home. The German operatives do not roam about from mill to mill, as is so much the custom in the United States, and therefore the mills are enabled to keep their processes more secret, and little improvements made at one mill are not so soon caught up and made general among other mills. According to law, the mill is supposed to pay one-third of the yearly premiums on the workers' insurance, the workers paying the other two-thirds, but this mill voluntarily pays two-thirds, as do a good many other mills, only leaving one-third to be paid in to the government by the operatives.

PLAN OF A LINEN WEAVING MILL.

The accompanying plans are those of a weaving mill for linen goods built by J. Pfefferkorn at Trautenau, Austria. The general features are the same as those of a weaving mill for cotton goods. The arrangement of the rooms and machinery, also the processes are similar in both branches of the industry. The ground plan of the Trautenau mill is shown at Fig. 7. It is divided into two parts by the passageway, I. At the left is a belt way, N, in the weave room, R, which is a one-story shed construction. In a wing next to the weave room is the boiler house, M; engine room, L, and the repair shops, K. At the right of the passageway are the packing and shipping rooms, the store room, dressing room and office, and in an annex, a sewing room. The latter is necessary because the works are connected with a garment making establishment.

The plan shows that the rooms are arranged to facilitate the carrying of the material from one process to the succeeding one. The yarn is unloaded under the projecting roof, h^1, and taken through a wide door to the shipping room, in which is a small office, h, where it is examined, weighed and packed away ready for delivery to the preparatory room, P. The warp yarn is sized in skeins, then brushed and dried. For plain goods the yarn is sized after warping. The skein yarn is spooled, warped and beamed in this room. The beams are then taken to the weave room. The woven goods are examined, measured and partially sheared in the room, P, after which they are delivered to the garment room, Q. The goods are sheared in the room, O.

In the sewing room, Q, are two rows of sewing machines set on long tables and driven by power. The finished goods are shipped from the same room in which the yarn was received. In the weaving room are 140 power looms of various widths. The first and last rows are looms for double width goods. The distances between the posts are as follows: Lengthways, 1 by 17 ft. 10 in., 4 by 20 ft. 6 in. and 1 by 16ft. 3 in.; widthways, 1 by 16 ft. 3 in., 3 by 23 ft. 8 in. The area between posts is 483 sq. ft, and accommodates 8 looms. Between each two rows of looms is a wide alley way.

The construction of the roof is shown clearly at Figs. 2, 3, 4, 5, 6. In the weaving room next to the belt way is a fresh air conduit running lengthways of the room to a room outside the building. In this room are atomizers by which moisture is supplied to the air, after which it passes through the conduit to the weaving room through openings in the floor. The foul air passes from the room through a ventilator in the wall of the belt way. Power is obtained from a 160 h. p. engine in the room, L. Eight ropes 2 inches in diameter drive the main shaft from the balance wheel, as shown in the plan. In the boiler house are 3 boilers, each having a heating surface of 840 square feet. The chimney is 115 feet high. The weave room is provided with a number of doors permitting of quick exit in case of necessity. The exterior of the mill is shown at Fig. 1. —Uhlands Technische Rundschau.

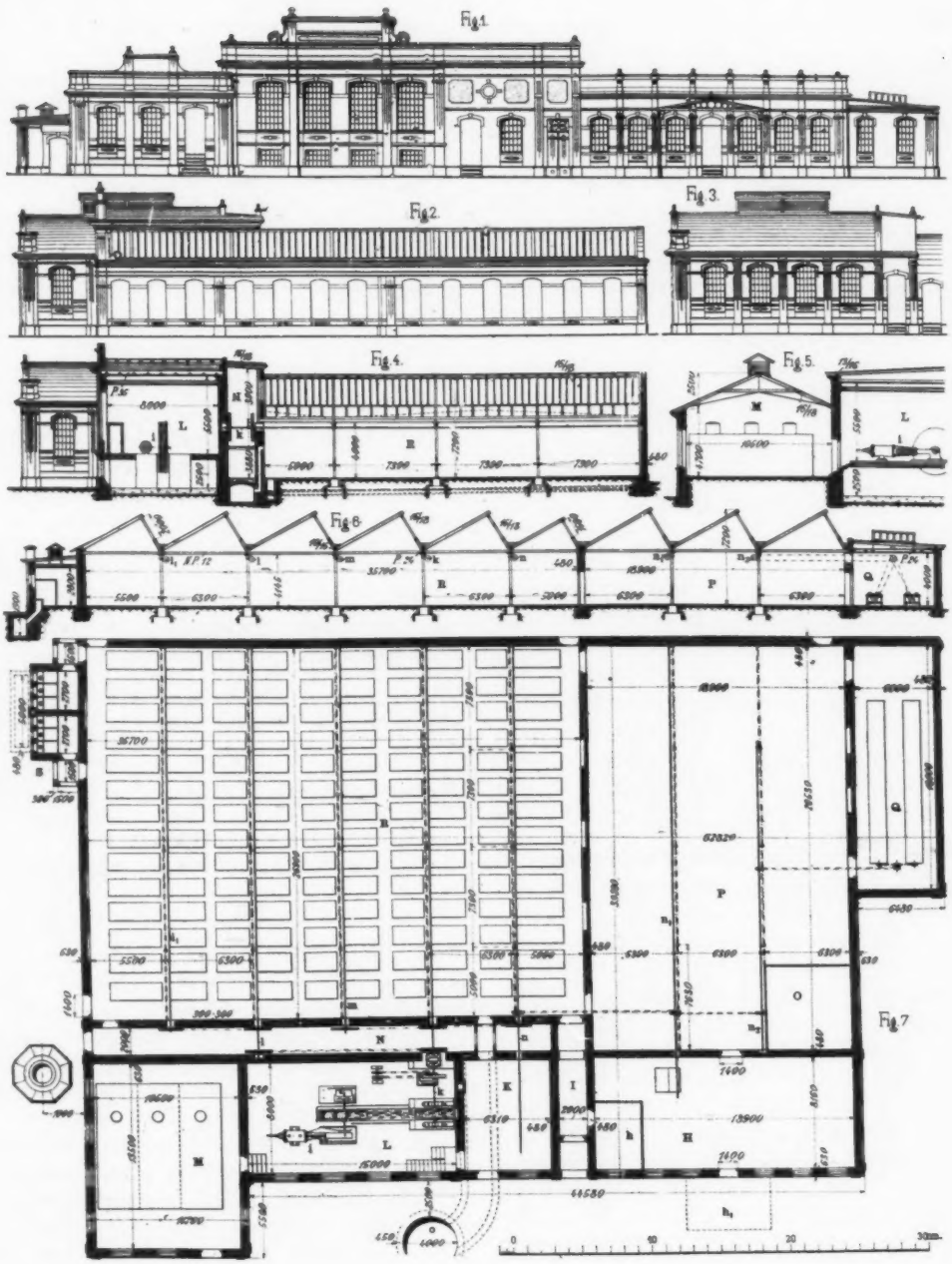


Fig.1.
Fig.2.
Fig.3.
Fig.4.
Fig.5.
Fig.6.
Fig.7.

THE USE OF CONDITIONING WORSTED.

BY ROBERT REGENT.

Will you "tell me"—a Yorkshire worsted spinner was asked—"why you condition your tops?" He looked sharply and answered "Tell me why you count your change?"

This spinner is a man who believes that there are both dishonest and genuine errors in business and he has a prejudice against paying for more than he receives. Accordingly the tops which come to him are conditioned carefully for his own satisfaction in his private oven. For the seller's satisfaction he takes also the certificates of the Bradford Conditioning House.

"You find it worth while?" I said "All this extra trouble pays?"

The spinner snorted. He told me to look here, at papers placed before me. They related to 13 bags of tops and nominally to 7,507 pounds weight, with that amount he stood charged, whereas taking the bone-dry weight with the standard allowance of 18 1/4 per cent. added he should pay only for 7,454 pounds. The weight was 1.9 per cent, or 143 pounds against him. The test put him $47 in pocket.

I looked again at a record of 4 bags weighing by scale weight 2,335 pounds and on the basis of standard condition weighing 2,296 pounds only. The difference was 39 pounds or 1.7 per cent. and the excess of water had been quite imperceptible to the touch. The spinner assured me that these were items he was altogether too poor and hard-driven to despise.

"But you have losses," I contended. "On a revision you do not invariably gain."

The spinner turned over a file of papers, at length producing one referring to 2,901 pounds which were so far under condition that he had to pay for 2,945. He was out 1 1/2 per cent. and this was exceptional. But the spinner is a just man and willing to follow proved results in either direction. In some other cases the test left him the worse of the bargain.

"Then you gain on the balance"? I said. The spinner determined to see. He tabulated 22 lots, aggregating 64,685 pounds, tested by the Bradford Conditioning House. Ten were in his favor, ten were against him, and two lots out of the whole were exactly right in condition. Details follow:

	Correct Invoice Weight.	
4 bag tops	2318 lbs.	gain 5 lbs.
6 bag tops	3366 lbs.	gain 14 lbs.
1 bag tops	582 lbs.	gain 2 lbs.
5 bag tops	2945 lbs.	gain 44 lbs.
2 bag tops	1171 lbs.	gain 15 lbs.
4 bag tops	1780 lbs.	gain 25 lbs.
2 bag tops	1277 lbs.	gain 15 lbs.
3 bag tops	1278 lbs.	gain 19 lbs.
5 bag tops	2426 lbs.	gain 23 lbs.
2 bag tops	1342 lbs.	gain 7 lbs.
	18,485	169

On this total the spinner was a loser of 9 per cent. meaning some $56. It is necessary to weigh against this the reduction in weight obtained by conditioning the other twelve.

	Correct Invoice Weight.	
3 bag tops	1,716 lbs.	loss 6 lbs
2 bag tops	860 lbs.	loss nil
5 bag tops	2,794 lbs.	loss 6 lbs.
7 bag tops	2,718 lbs.	loss 25 lbs.
18 bag tops	12,019 lbs.	loss 6 lbs.
5 bag tops	3,332 lbs.	loss 25 lbs.
7 bag tops	3,949 lbs.	loss 2 lbs.
3 bag tops	1,988 lbs.	loss nil
6 bag tops	3,931 lbs.	loss 23 lbs.
8 bag tops	3,144 lbs.	loss 16 lbs.
13 bag tops	7,454 lbs.	loss 143 lbs.
4 bag tops	2,296 lbs.	loss 39 lbs.
	46,201	291

On this total the spinner gained 6 per cent. equal to $100. The process of testing therefore gained him $44.

To my comment that the gain seemed small, the spinner replied that he wished all his earnings came as easily. He deals only with firms whose dealings have usually been satisfactory. He deals with men who know that their deliveries will be tested and who are consequently unlikely to add moisture. Yet this record shows over-condition to be commoner than under-condition even in those circumstances. What the practice may be when materials are not tested and the supplier knows they will go untested this spinner can imagine. He is persuaded that

the seller will not be on the side unfavorable to himself. For his own part the spinner will have no more dealings in the dark.

Just to show that over-condition is not a product simply of dishonesty, records were produced referring to certain parcels of scoured wool. Bought in the grease, the wool was scoured by one who had no interest in swelling its weight. This is how the tests showed the wool to be over weight:

Scale Weight.	Correct Invoice Weight.	Loss.
2248	2216	32
764	736	28
592	575	17
3604	3527	77

On scoured wool the allowance for moisture is 16 per cent. and the actual content in these cases exceeded 18 per cent. The spinner was selling and in consequence losing the $35 resulting from this discrepancy between real and apparent weight. But this experience does not convince him that even from the seller's point of view weight fixed by reference to absolute dryness is any misfortune. The practice of conditioning shows all parties how they stand and the certificate of a duly constituted conditioning house puts a conclusion to all complaint. The spinner, moreover, is one whose yarn is scrupulously tested for moisture by his chief customers.

A SHUTTLE CHECK AND RELEASE DEVICE.

The object of this attachment, which has been recently patented, is to relieve the strain on the shuttle-box binder and remove the pressure on the shuttle as it is about to be driven across the loom. It consists of an arm connected to the protection rod on the front of the lay. This arm is engaged by a pivoted lever and tilted when the lay is in its backward position and the shuttle is about to move across the raceway. The shuttle sometimes sticks in its box or is hindered in its start across the raceway, in looms as ordinarily constructed; especially is this the case in damp weather. It is to overcome this difficulty that the mechanism is designed.

Fig. 1 is a side view of a loom equipped with the attachment; Fig. 2, a front view of the shuttle box, showing the new mechanism. When the lay is in the position shown in Fig. 1, the collar of the rod bears against

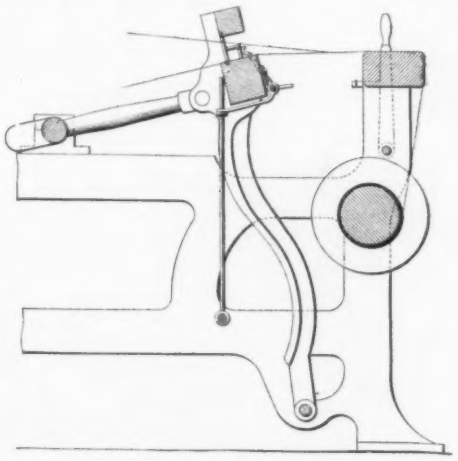


FIG. 1.

the under side of the arm, thus oscillating the protection rod and relieving the binder from the pressure of the finger. At this time the shuttle is shot across the raceway and, as the pressure of the protection finger

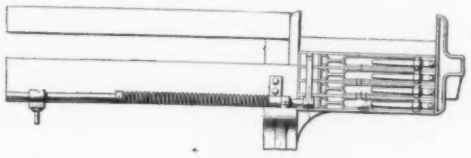


FIG. 2.

against the binder has been released the liability of the shuttle to stick in the shuttle box is reduced.

If for any reason the shuttle does not reach the shuttle box the finger presses against the binder during the forward movement of the lay and the collar, retreats from under the arm, thus allowing the protection rod to turn and move the finger to a position where it will strike the arm on the shipper and thus stop the loom.

There are in Egypt seven cotton seed oil mills, consuming annually about 95,000 tons of seed.

CORRESPONDENCE AND NOTES

Upon Textile Topics At Home and Abroad.

BAGGING FOR COTTON BALES.

BY T. WOODHOUSE, Dundee.

Much has been said and much remains to be said concerning the imperfect and unsatisfactory system of baling cotton as practiced in America. The general feeling for some time has been that something should be done to improve the present system, and, indeed, a comparison of the Indian and Egyptian bales with those from the Southern States of America alone emphasizes the necessity for improvement.

There are probably many conditions which have brought about the unsatisfactory state of baling, and these must be remedied if any decided improvement is to take place. The present arrangement between buyers and sellers admits of a 6 per cent. tare, that is, if a bale weighs 500 pounds, there is an allowance of 30 pounds for tare in the shape of covering and bands. As long as this rule remains in force so long will the balers, for obvious reasons, clothe the cotton with as near that amount of tare as possible.

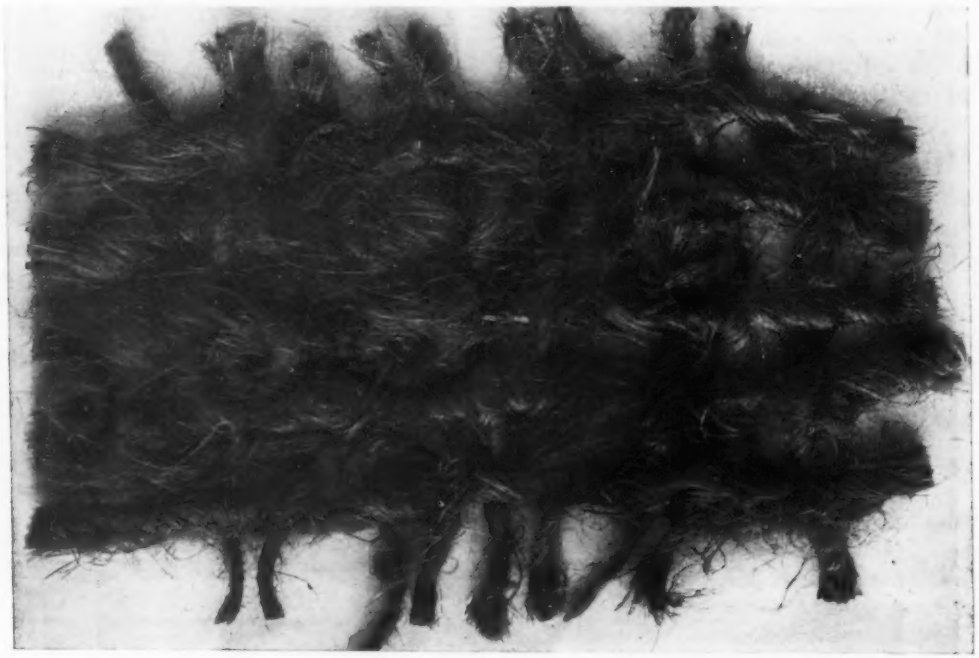


FIG. I.

The Atlanta Cotton Conference condemned the present methods of baling because:

1. The cloth now in use is of a coarse and rough nature, and therefore invites rough treatment.
2. It does not hold the marks.
3. On account of its great weight and bulk, it entails heavy loss in freight.

While admitting that, as a rule, goods in a coarse covering are likely to be treated more roughly than when covered with a finer material, the blame for existing conditions must not be laid entirely on the rough appearance of the cloth. The balers follow the usual method of business, getting what they consider the best value for their money. The amount of tare at present allowed can be obtained more cheaply as thick bagging than in any other form. Poor as this bagging was originally, its quality has gradually deteriorated; indeed it has now reached such a state that if any alteration is to take place it must be an improvement. It is difficult to see how the covering could be inferior unless the common mending bagging were used.

A definite arrangement as to the style of cloth appears essential. If the sizes of yarns and the number of threads and picks per inch were fixed, the only means of adulteration would be in the quality of the material, and in the material itself. The adoption of some such agreement would immediately improve the present conditions, for the tare would become a practically constant quantity, provided a uniform size of bale were decided upon. For a given volume, a cube would require the minimum amount of covering, but a bale of this shape would probably be inconvenient; at all events, any uniform standard of size would, with the above suggestions, fix the amount of tare.

Now as to objections 2 and 3. The present bagging is quite unsuitable for marks except for the very boldest character, while the excessive freight will remain until some new agreement as to tare is made. A change in the fineness of the cloth would not only meet the requirements for marks, but would, at the same time, reduce the freight. At the Atlanta Congress it was recommended that a light burlap or covering such as Osnaburg of 10 ounces per yard, 40 inches wide, should be adopted.

FIG. 2,

The ordinary burlap, Fig. 1, is made entirely of jute, and is known also by the name of hession; the standard cloth is termed an 11 porter, 10 1/2 ounces, 40 inch hession, and is used largely for covering all kinds of merchandise. This cloth, which is the weight and type of material suggested at the Atlanta Conference, contains in the finished state about 13 threads and 13 picks per inch. The

warp is usually 9 pounds per spindle (14,400 yards) and the weft is 8 or 9 pounds.

Large quantities of 10 and 11 porter burlaps are shipped to the River Plate for use in South America. This cloth is thin and the damp from the ground would easily penetrate into the bale. The American bagging is of an entirely different make and is made in two widths. The 44-inch bagging, Fig. 2, weighs 2 pounds per yard and contains about 2 1/4 threads per inch (9 threads in 4 inches) of 70 pounds per spindle warp, and 2 shots per inch of 240 pounds per

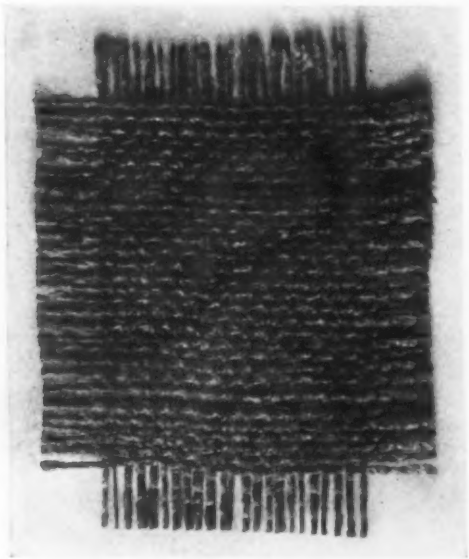


FIG. 3.

spindle weft. The 27-inch cloth is made from 90 pounds warp and 240 pounds weft. This width is probably used in some districts for the ends of the bale. In spite of its many shortcomings this fabric has something to recommend it. It is very thick and consequently it keeps the cotton from coming into contact with the ground. If it were made with a few more threads and picks it would be much more valuable, although heavier.

The Liverpool mending bagging, Fig. 3, contains about 5 threads per inch of 9 pounds warp, and 3 shots per inch of 300 to 350 pounds weft. It is 40 inches wide and weighs from 2 to 3 pounds per yard. When the cotton arrives in Liverpool, it is customary to cut into the bales in order to take out samples of cotton. This mending bagging is used to cover up the holes thus made and to make up for the loss in weight caused by the removal of cotton samples.

The Sea Island bagging is by far the best kind of bagging made for covering cotton. It is more closely woven than the American bagging, but is not so thick. The cloth is made in two widths, 50 inches and 44 inches. Both are woven in a 6 porter reed (equal to about 7 threads per inch finished) with 18 pounds per spindle warp. There are 8 shots per inch of 56 pounds weft in the 50-inch cloth, Fig. 4, and about 7 1/2 shots per inch of 68 pounds weft in the 44-inch cloth, Fig. 5. The weight of each is about 2 pounds per yard.

The relative sizes of the warp and weft yarns are shown by the warp and weft fringes

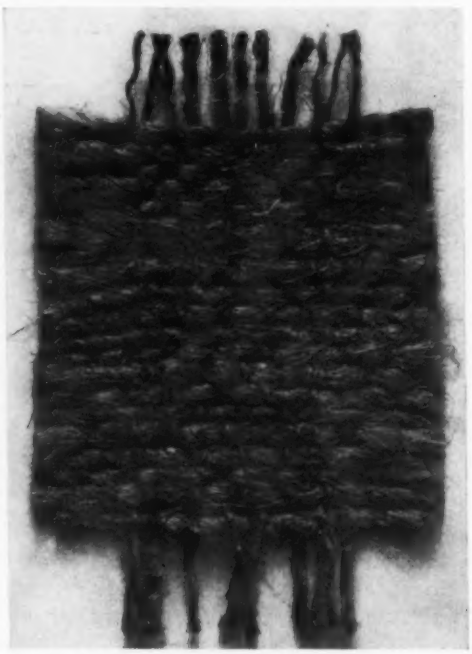


FIG. 4

on each pattern. Several tests of the cloth, both warp way and weft way, were made in order to obtain the breaking load of each

fabric. The particulars of these tests are as follows:

Fabric	Distance between grips	No. of threads tested	Average breaking load	Average load for each thread	Breaking load per in. of width
A warp	20 in.	7	125 lbs.	17.9 lbs.	40.3 lbs.
B "	20 "	16	72 "	4.5 "	22.5 "
C "	20 "	20	190 "	9.5 "	66.5 "
D "	20 "	20	190 "	9.5 "	66.5 "
E "	13 "	36	178 "	4.94 "	64.2 "
A weft	20 in.	7	192 lbs.	27.4 lbs.	54.8 lbs.
B "	16 "	9	202 "	22.4 "	67.2 "
C "	20 "	24	272 "	11.3 "	90.4 "
D "	20 "	22	310 "	14.1 "	105.7 "
E "	20 "	37	154 "	4.2 "	54.6 "

It will thus be seen that, in spite of the coarse nature of the cotton bagging, it can bear a moderate amount of pressure.

caused by the amount allowed for tare. A uniform allowance of 22 pounds per bale instead of 30 pounds has been suggested, but, in addition to the amount of tare, there are the important questions of density and the dimensions of bale to be considered. There appears to be no reason why all new presses should not be made to some standard size. If the dimensions of the bale were 54 by 27 by 16 inches, the volume would be 13 1/2 cubic feet. A 500-pounds bale could therefore be obtained with an approximate density of 37 pounds per cubic foot. Such a density would minimize considerably the risks of damage by fire or water. Moreover a standard bale would secure uniformity in

Dimensions of Bale 54 in. x 27 in. x 16 in.	12 oz. cloth	16 oz. cloth	20 oz. cloth	24 oz. cloth	28 oz. cloth	32 oz. cloth
6 yards of cloth	4 lbs. 8 oz.	6 lbs. 0 oz.	7 lbs. 8 oz.	9 lbs. 0 oz.	10 lbs. 8 oz.	12 lbs. 0 oz.
6 hoops = 48 feet				8 lbs. 0 oz.	8 lbs. 0 oz.	8 lbs. 0 oz.
6 buckles and 12 pins				1 lb. 5 oz.	1 lb. 5 oz.	1 lb. 5 oz.
9 hoops = 72 feet	12 lbs 0 oz.	12 lbs. 0 oz.	12 lbs. 0 oz.			
9 buckles and 18 pins	2 lbs. 0 oz.	2 lbs. 0 oz.	2 lbs. 0 oz.			
Total Weight	18 lbs. 8 oz.	20 lbs. 0 oz.	21 lbs. 8 oz.	18 lbs. 5 oz.	19 lbs. 13 oz.	21 lbs. 5 oz.

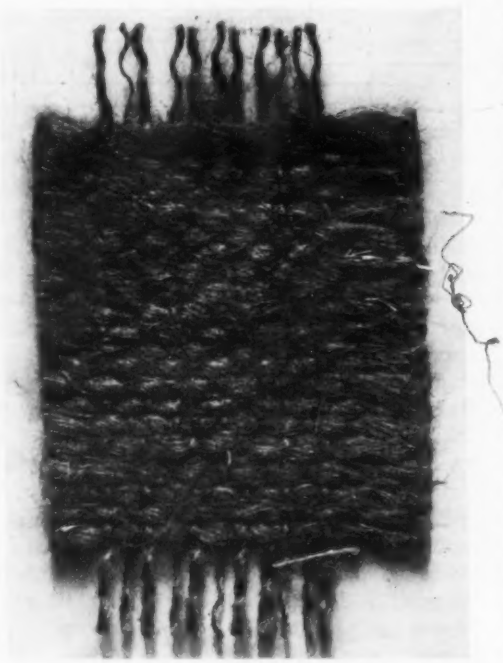


FIG. 5.

We have already stated that one of the objections in connection with the present system of baling is the unnecessary extra freight

the width of the fabric as well as in the lengths of the ties. Six yards of cloth should be ample to cover this bale, while the total length of hoop would naturally depend upon the number of ties. With a strong fabric, such as the Sea Island bagging, 6 ties might be sufficient. A lighter fabric, such as has been suggested, would be safer with 9 ties. In the former case, the distance between the ties would be 9 inches, and in the latter case, 6 inches. Six feet per pound is the weight of a satisfactory and strong hoop, and if the ties were made of this quality of hoop, and were fastened by the modern buckles and pins, the amount of tare for a few different methods of baling would be as follows:

If it were found necessary to use 9 ties or hoops for the heavy cloths, the weight of the additional ties, buckles and pins would be only a little over 4 1/2 pounds, so that the maximum tare would be 26 pounds. The Sea Island cotton bagging is about 50 per cent. dearer than the ordinary cotton bagging, but it would be a most satisfactory covering, and, on the whole, I think it would be the most suitable cloth for the purpose. At the same time, if this were considered too heavy, a burlap of any less weight per yard could be easily obtained.

THE DRESSING ROOM.

BY C. H. CHISHOLM.

(Continued from May.)

In giving out work to the dressers, the following points should be kept in mind:

1. The work now in the frame.
2. The threads in section.
3. The number of sections.
4. Width.
5. Threads in the pattern.
6. Kind of yarn.
7. Wet or dry.

When each shade of yarn is spooled it is checked off on the sheet, Fig. 1. The back of the tickets on the board will show what has been done. The tickets not on the board will be found with the spooler. Every order on sheet Fig. 1 is marked when finished. After finding what is available, the style that meets most of the requirements should be assigned to the dresser. It is better to take out threads than to put threads in when tying up a warp.

Having for example decided to assign style 10,009, pattern 3, a slip is made out as follows:

Style 10,009, pattern 3, warp 4, cuts 6, 6, 6, 7 = 25 cuts 62 yards.

Shade 232, pile 11
Shade 200, pile 11
Shade 128, pile 4-5
Shade 205, pile 10
Shade 242, pile 9
Shade 210, pile 6
Shade 510, pile 6
Shade 160, pile 11

The pile numbers are found in the spooler's book, Fig. 6. This slip is hung on dresser's nail. When ready the dresser takes the yarn from the pile; the pattern spools he gets from either the overseer or second hand.

As the cylinder is 41 inches wide, a 16 reed will take in both section and selvage. Assuming that there are enough threads, 595, in the reed, the point to be decided next will be from which side to read the dressing plan. This depends on the method of beaming the warp. If it is to be beamed from the top in front the plan is read from left to right. If it is beamed from the bottom at the back it is read from right to left. Let us suppose the latter is the case. We find by reference to the dresser's book of plans that by picking up shade B we will have a very easy 2 × 2 pick up thereafter. Shade B is picked up for 66 ends, beginning 12 down 3 up, 24 down 3 up, repeated 21 times, finishing with 12 down. Then pick up for D and E, 2 up and 2 down across the section. Now split D 1 up, E 1 down, B at top and D next. The spooler plan calls for 2 threads for a pattern spool and 3 for straight spool. Thus 3 up and 2 down, 13 times, then 1 up gives 40 threads of B up, making the first spool on the top. Next take 26 ends of B and pick from shade D, one between every 2 of B, finishing 2 B, making a total of 26 B and 12 D. Tie separately and then together. We next pick up for 3 spools of D, first one up and 2 down, then 1 up and 1 down. Each spool is arranged and thrown up making spools 3, 4 and 5. All of E shade is thrown up in a bunch. Shade G is picked 14 down 2 up, 22 down and 2 up, repeated 10 times and finishing with 8 down. These are bunched and thrown up. F shade is picked 8 down 2 up, 8 down 2 up, and then 10 down 2 up, 8 down 2 up, 10 times, finishing with 2 down, giving 44 threads up. Threads E, F and G are next picked for number 3 pattern spool. Four threads of F fit G in the plan. Each shade is

Lbs. per 1 Hole of Yarn on Spool

Use constant as multiplier

Number of Yarn	Yds per lb	40 end spools	48 end spools			
4 run	6400	.3750	.4191			
5/4	8400	.2858	.3191			
3 3/4	6000	.4000	.4467			
1/2	2400	1.000	1.1167			
6	9600	.2500	.3000			
2/15 worsted	4200	.5712	.6381			
2/32	8960	.2679	.3000			
2/36	10080	.2380	.2659			
2/40	11200	.2143	.2393			
15/2 silk	12600	.1905	.2127			
36/2 "	30240	.0793	.08863			
60/2 "	50400	.0476	.0532			

FIG. 7.

tied separately and bunched together. The balance of the threads, E, are split for 3 spools, making the 6th, 7th and 8th spools. Number 3 pattern spool makes the 9th. The balance of threads, F, makes the 10th spool. Threads H are picked 2 down 2 up, 16 down 2 up, repeated 10 times, finishing with 14 down, making 22 threads of each. Next pick 2 threads up for A and 2 down for C. Threads A are passed above threads H. Pick A and C 8 threads each to suit the threads H for number 1 pattern spool. The remaining threads of A are split for 2 spools, bunched and thrown up, making the 11th and 12th spools. The 13th spool is a pattern spool. Threads C are split for 2 spools, making the 14th and 15th spools, finishing the pick up.

Care should be taken to see that all spools are properly bunched and that threads for the pattern spools are tied up by shades as well as in a bunch. When twisting on the pattern spools the colors are separated and each group twisted separately. If shades are very near alike, strings should be put in to separate them. The overseer now looks over the tie up to see that everything is all right. The dresser reads the number of ends and shades for one pattern and for the other patterns he reads only the shades. The overseer calls out the number of threads. In this way errors are reduced to a minimum.

Allowance must be made for the spread of the section. Clean, smooth yarn will dress to the width between pins. Lofty, fluffy yarns will spread more or less. It is not advisable to twist the head reed, it should be kept parallel with the reel. Let us assume that style Fig. 3 is woven 77 inches wide with a 4-leaf twill. In such a case an extra 4 inches should be allowed on the beam. The sections are placed as follows:

81 ÷ 7 = 11.57 or 11 1/2 inches. As the pins are 1.4 inches apart the section should be made 11 1/4 inches wide, using a 10 reed. 10 × 11 1/4 = 113 dents. 594 ÷ 113 = 5 1/4 threads in a dent. This set is obtained by reading 5, 5, 5, 6. Some dressers divide the number of threads in a section by the dents. 595 ÷ 113 equals 5, with a remainder of 29. They then chalk mark 29 dents across the width and put in an extra end at each mark. I recommend that the speed of the reel be 50 per cent. higher than to take yarns as delivered by size roll. Frequent changes of the tension pulleys are objectionable and the source of much trouble in the way of high and low sections.

When an order is finished spools of over one hole should be returned to the pile; spools with less than one hole should be rewound. All yarn left over will ultimately be weighed and a record made in the stock book. The pieces of pattern spools are wound on filling bobbins and used for piecing yarn.

The average cost of dressing is as follows:

Woolen, 4 1/2 runs, .0080 cents per pound.
Grey worsted, 2/36s, .0080 cents per pound.
Fancy worsted, 2/40s, .01 cent per pound.

This system for a dressing room may seem complicated, but it is easily understood. I have used complex examples for illustration. I find that that in making pattern spools the yarn varying considerably will spool together. After the sheet, shown at Fig. 1, has been filled out and the spool order entered in the spooler's book, reference is made to the surplus yarn book and a record made in the spooler's book. If the yarn is on spools the quantity will be indicated by the number of holes. It is a good plan to compare sheets in order to correct any discrepancy. In this way no yarn goes to the dressing room by mistake and any surplus is always in sight. The number of ends are kept the same for all spools except the pattern spools. Pattern spools are essential to perfect work. Broken spools cause much waste and it is very difficult to keep them level. They also cause tight and slack ends in a warp. They reduce the production and necessitate the use of larger creels. Running yarn from bobbins is a bad practice. The bad results from running broken spools and bobbins should have put a stop to the practice long ago.

When using worsted yarn delivered from another mill on Jack spools, the yarn waste in leveling the spools would amount to more

than the cost of winding and respooling on pattern spools. Warp compressors give good results. They put an excellent face on the beam and reduce the strain on the yarn when beaming. They also put 50 per cent. more yarn on the beam, but they will not remedy high and low sections.

THE ECONOMICS OF "SHORT TIME."

BY PROF. S. J. CHAPMAN.

(From the Manchester Guardian.)

Nobody would claim that formal analysis by an economist could settle practical policy as regards the regulation of output, but it may perhaps be helpful or suggestive to those who know, as the writer does not, the weight and character of the governing facts. It is the writer's aim simply to bring possible reasons, pro and con, into logical focus. I shall proceed throughout on the assumptions that the rate of wages must remain unaltered at a time of merely temporary shrinkage of demand, and that concerted action on the part of the trade or a branch of it is possible.

In view of the Brooklands Agreement and the insistence of the organized cotton operatives upon a comparatively steady standard rate the first assumption would seem to be legitimate. I say nothing one way or the other as to the appropriateness of the relatively rigid wage-rate implied. Further, I shall suppose provisionally that we have no foreign rivals; but I shall allow finally for their existence. And in the first instance I shall not allow for the reactions on demand of the raising of prices against the buyers (if the industry in question sells to producers), nor for the effect on the supply of material of artificially contracting the demand for it.

It will be most conducive to clear thinking to take the problem piecemeal, beginning with the simplest imaginable case—which is not like that presented by the cotton industry,—and to introduce later those complexities which will render our treatment more closely relevant to the conditions in the cotton industry. First, then, I classify.

There are two sharply defined general cases to consider: 1, Where sales in the present do not spoil a future market—for instance, when the goods are perishable; 2, where future needs for the goods in question may be satisfied by present purchases. Case 2 subdivides into two according as goods can or cannot be stocked without loss of value.

We shall begin with the exclusive consideration of case 1. In this case there can be no producing for stock. Clearly the working hours most economical to employers are those which maximize when it is a credit balance and minimize when it is a debit balance, the difference between total takings and the existing outgoings. The larger this difference the greater is the amount to set against dead charges which are regarded as constant.

This result is a first approximation. It must be corrected by allowing, among other reactions, for the effect of reducing weekly wages in the industry upon the demand for the product of the industry. This effect is depressing both directly and indirectly. The demand of the operatives in question for the commodities produced by their own industry must collapse, and as their demand for the product of other industries collapses also depression will be communicated to or intensified in other industries, and the result, by reaction, will be further shrinkage of the demand which their own industry exists to satisfy.

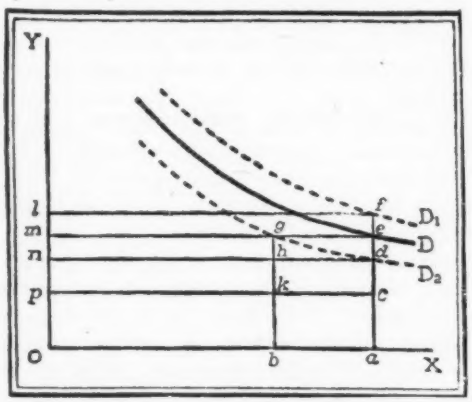
The employer who is acting with a long-sighted regard for his own interests will therefore aim not merely at maximizing the differences between takings and outgoings which could be saved (i. e., wages in the main), but also at hours which depart as little as possible from normal hours in the industry. These two ideals cannot be accurately balanced against each other. Only a rough compromise is possible. The cautious employer will realize that the odds are against him if he reduces weekly hours considerably in order to raise slightly his receipts against dead charges.

There is another reason why some sacrifice of these receipts should be risked rather than that the hours should be greatly reduced. This reason is that any degree of short time means loss of wages to the operatives unrelieved by any countervailing gain in the special case supposed. We are as-

suming that the operatives, if free to choose, would not prefer ordinarily a somewhat shorter day and proportionately lower wages. In estimating the loss of the operatives the burdens which they bind on their backs through inability to reduce their weekly expenditure immediately to the level of the new weekly wages must be allowed for. These burdens remain for many a month or year after the return to full time.

We may now concentrate our attention upon the conditions under which short time may be expected to increase appreciably the receipts against dead charges. Short time is never recommended except as a response to collapsed demand, and it would not be recommended unless there was some reasonable prospect of it administering a solid heave to prices. The effect of short time on prices does not alone settle the question whether in any given case reduced hours would be advantageous or not, as we have seen, but it must play a leading part.

Now, the important fact to determine is the rate at which the prices of the product of the industry in question rise with different percentage contractions of output. This relation indicates what is known technically as the elasticity of demand. If prices rise rapidly as output is checked demand is said to



be highly inelastic; but if they rise very slowly it is said to be highly elastic. Is the demand for cotton goods very elastic or the reverse? If it is very elastic short time would not elevate prices much, and, other things being equal, the case for short time would be weaker than if it were inelastic.

Let us now, in order to get the argument clear cut, try to express it in a diagram. Along O X measure quantity of output and along O Y price. Then the curve D indicates what prices will be at different outputs when demand is in a normal state. D^1 expresses the same when demand is inflated, and D^2 the same when demand is in a state of collapse. Let the normal output be O a. Then the price normally would be a e, and the total takings would be O m e a (i. e., price a e multiplied by output O a). Of the total takings let O p c a cover prime costs (i. e., material, wages, etc.), and p m e c supplementary costs (i. e., profits and dead charges). When demand is inflated, as shown in the figure, supplementary takings are increased by m l e f. When demand collapses they drop, and may even become zero or a negative quantity. If they become negative, it is unlikely that some short time (as much, at least, as to make them positive) would not be desirable. In the case represented by the diagram supplementary takings become p n d c when demand collapses. Whether they would rise with short time evidently depends upon the steepness of D^2. If its inclination is slight, p m g k (which represents these takings when output is reduced to O b by short time) may be less than p n d c.

I have heard it argued that short time is requisite to restore a normal or healthy state of demand. The contention is that a collapse of demand means an abnormal state, and that abnormality by habit may become normal if it is not corrected. So prices must be thrust up and held up by short time. It is argued that when this support is withdrawn after an interval the prices, having recovered their old habit, will remain up. While there is something in the view that habit is to be reckoned with in demand, a fallacy lurks in this presentment of the situation, for the short time does not, and cannot, string up the relaxed demand. The demand represented by D^2 is still the one in operation after the imposition of short time, but by the expedient of short time the reflection of the drooping demand in prices is intercepted.

I shall now deal with the two classes of

case 2 defined above, and make the corrections required to fit my argument better to the conditions of the cotton industry.

The general conclusions reached thus far are as follows: (1) That though short time raises prices it does not appreciably in ordinary circumstances string up a relaxed demand. (2) That the effect of short time upon prices may not benefit the employer much, if at all, when demand is highly elastic (i. e., when a large reduction of sales effects only a small movement in price). (3) That in framing his policy the wise employer will bear in mind that short hours mean (a) immediate loss to the operatives and, (b) through their lower wages, the propagation of industrial depression, which will react upon the industry running short time. Further, taking the simple case in which the satisfaction of a present demand does not affect future demand deleteriously, we reached the conclusion (4) that, apart from the consideration laid down in conclusion 3, the maximizing of the aggregate receipts against supplementary costs should generally be aimed at.

The analysis of the simple case just mentioned should have prepared our minds for the more complicated considerations involved when the demands of different times are not independent. The striking new feature in the situations to be investigated next is that present sales eat up future demands. By selling cheap today an employer may risk the chance of selling at a satisfactory price tomorrow. We are still assuming that there is no foreign competition. Take first the case in which it is practically impossible to forecast with any accuracy the peculiarities of future demand.

In order to make this as strong a case as possible we shall imagine that much of the value of the commodities produced depends upon their hitting, to a nicety the idiosyncrasies of the demand of the moment. When much of the value of a commodity is so precarious its production would take place only on order, approximately speaking, since stocks could seldom be disposed of except at a heavy discount. In the limiting or extreme case stock would never be produced. We shall investigate this limit.

The sole new circumstance is the absorption of future demand by present sales. The employer will have to set his estimate of this loss against the desiderata (from his point of view) already defined—namely, (a) little or no reduction in hours rather than much reduction, and (b) the maximizing of receipts against dead charges. Clearly then, other things being equal, the case for short time is stronger in this instance than in the simple situation first examined. It is fortified also by the fact that the operative likewise is now driven into a desire for short time by the fear of a subsidence of demand for a lengthy period and a consequent drop in the rate of wages.

However, this very important point must be taken into account, that in the degree in which a commodity cannot be manufactured speculatively without risk of heavy loss is the influence of present sales on future demand usually weakened. Thus, let the article be one which fashion must shape entirely if it is to sell—say, to take an extreme case, ladies' hats. Ladies' hats, it is true, cannot be made today for sale twelve months hence. But it is equally true that the sale of an extra 100,000 ladies' hats in the autumn of 1907 in a country where fashion is so strong would not gravely affect the demand for bonnets in the autumn of 1908. This consideration must appreciably weaken our conclusion as to the value of short time in the circumstance postulated.

Now take it that the commodity can be stocked, like pig-iron, without deteriorating, and still ignore foreign competition. Evidently the sole ground for lowering prices when demand temporarily sinks is the burden of the interest locked up in stocks withheld from sale. Equally this interest charge is the sole ground for running short time. Leaving this interest out of account we realize that the obviously paying policy is to produce steadily but restrict sales so as to retain the normal level of prices. It is even to the advantage of the individual producer to act in this way, apart from agreement with his rival manufacturers, if there is no fear of connections with customers passing permanently into other hands, so that it may pay to angle for them at a temporary loss.

Moreover manufacturers, when dwelling on the cost of stocking, will not dismiss lightly the deterrent thought that inflated demand is not an unknown incident, that working overtime (which is impossible in the cotton industry, or working at pressure to take advantage of it, is a costly proceeding, and that stock at such a time is a gold mine.

Thus far we see that the case for short time is only strong, outside very exceptional circumstances, when present sales largely affect future demand and stocking cannot be risked to any considerable extent. Generally speaking it would seem that there is more to be said for short time in the cotton industry in manufacturing than in spinning, when both are faced with identical degrees of contraction of demand.

Now take cognizance of foreign rivals. Of course if they, too, agree to run short time this case need not be noticed. Suppose, however, that they do not. Then if we adopt short time, we undergo all the expense of making the market more favorable to the cotton industry and they share in the gain. Their action, too, makes it more difficult for us to produce a given effect on prices by running short time, and our foreign rivals enjoy the additional advantage of being left a free hand to entice our customers away from us. This point we must also bear in mind as regards certain foreign markets, that they grow on what they feed on. The more cottons they take the more they will require in the future. They are being educated to consume cottons. Hence some cheap sales are not all loss, but may be calculated to return their cost, like the gratuitous sample packets of cocoa, stove polish, concentrated foods, and what not, which are left at our doors.

I referred in my last article to the undermining effect upon the already depressed demand which low wages might be expected to bring about ultimately, and in addition to this reaction there are others which are far from negligible. Suppose the industry subserves another, as cotton spinning subserves manufacturing. Then it might be easily demonstrable that short time would be beneficial, in view of the existing state of demand; but it might be disastrous, nevertheless, were the state of demand made even worse by the customer industry being tempted by the higher prices into running short time also. And the customer industry might be stung into this action even against its own interests in a spirit of retaliation.

Then on top of this disaster—assuming it to be a disaster—comes the unfortunate long-period effect upon demand of thousands of other operatives suffering a reduction of wages. And, turning our eyes in the other direction to the providers of the raw material for the industry which takes the initiative in adopting short time, we perceive possible reactions no less hurtful. The market of these providers being artificially unsteadied, they will be cautious about future supplies, with the result that in the next period of good trade a serious check may be administered by a shortage of raw material.

I have not demonstrated that short time never pays, but I think I have shown that there are influences beneath the surface which render it a more dangerous expedient than at first appears. Whether in any given circumstances it is a wise policy must be left to those who can thread these mazes of analysis with a knowledge, derived from facts, of the importance of each class of considerations.

The foregoing article by Prof. Chapman called forth the following letter from William J. Orr, a cotton manufacturer, whom many of our readers know:

Sir,—In considering this question it would seem that the most important factor governing any decision is the fiscal policy of the country. It is evident that with our existing policy of free exports and imports the cheaper our cost of production and the lower our selling price to the consumer the more likely we are to control the markets of the world and keep manufactured goods from our list of imports. It is equally evident that organized short time has precisely the opposite effect, as well as aggravating the position by reducing the spending power of operatives. But this does not sum up all the evils. Suppose, now that the cotton trade has entered on a period of depression, that the trade were to adopt short time until prices rose to a level which would enable the trade to pay the usual 10 per cent. dividends, which could doubtless be done for a time, what would be the effect? Would it not simply create an artificial position, stimulating mill building in this and other countries and attracting manufactured goods to this country?

It is important in considering this question to remember that every reduction in hours worked increases the cost of production and requires a proportionately greater margin to pay an equal dividend. We have heard much of late respecting reckless mill building and company flotation, but have we considered the cause when we advocate short time? Will not 10, 15, and 20 per cent. dividends attract capital into any industry? Then what is the remedy? Will not 1, 2, and 3 per cent. dividends have the desired effect? This being granted, times of depression should be worked through with as little organized interference as possible, and the firm or company which is prepared to run its plant at a minimum of 2 or 3 per cent. return on its capital is a benefactor to the country, in that it keeps labor employed, creating a spending power; lowers the average price to the consumer, thus commanding the markets of the world; restrains further extensions both in this and other countries, and thereby helps to put the trade in a position to command full prices when the next boom comes.

Referring to the diagrams which have appeared in your previous issues, I fail to see how the supply of raw cotton, the increase of spindles and looms, the supply of skilled labor, the demand for goods, the price of silver, the fixed expenses of a factory can be combined to produce a diagram so long as they are each separately affected in one form or another by speculation.

ENGLISH NOTES.

By Our Special Correspondent.

Almost all reports as to the state of trade are dismal. Money and orders are alike slow in coming in. Much machinery is standing and every pretext is taken for a general stoppage of the mill. Cotton spinners in Yorkshire, working principally for worsted and woolen looms, are running 40 hours a week. Lancashire spinners have at least as much reason for doing the same. They, however, are ready to put themselves to loss in order to discourage mill-building projects and to humble the speculators who have added so many to the number of spindles. The strong are intent on freezing out the weak.

Worsted spinners are at a loss to get delivery instructions out of old contracts and can make no considerable new ones even at half the prices of last year. Too much money is occupied in liquidating losses to leave large free capital for such speculative wool buying as the occasion might seem to warrant. In all directions cloth buyers think to gain by waiting. For that and other reasons demand is restricted everywhere. Yet the time may not be far off when capitalists will step in to buy raw woolen materials for the rise which is expected as definitely as dawn.

* * *

Change of conditions has not thus far stimulated the invention of great novelties in worsted with which to tempt trade. There is no lively sampling and experimenting on new lines, perhaps because of the large lots of fancy stuff for which delivery has yet to be taken. At all previous times when crossbred has fallen heavily a strong stimulus has been given to black and blue plains. Twills and serges in dress and men's weights come into vogue and stay there until carded and cotton goods become markedly cheaper under the influence of the rebound in worsted prices. The reappearance of orders for hard twills is looked for again.

The run on greens in men's clothing for the summer is clearly marked. Green ties, green socks, even green boots and hats go with green suitings and overcoats. It is a matter of experience that green makes exceedingly bad stock when once the passion for it is exhausted. In a less degree that is true of the other popular color, which is brown. Apart from plains no fashion has the same stability as that for greys and our wholesale buyers allow that consideration to influence them a great deal. In consequence grey has its place in selections for all seasons, including the following one.

* * *

The hand painting of fabrics might possibly be organized on a commercial scale. At present it is done in a small way by individuals and by the ladies of the Dress Designers' Society of 52 Brompton Road, London. They have a novelty in a series of washable paints applicable to linens and especially suited for filling the outlines of embroidered patterns. In a retail way some 40 cents is paid for enough paint to give a double coat to two or three thousand square inches of material.

* * *

A forthcoming finish for linens to render them stiff and harsh and repellant of water and dust is understood to rely on chemical means and not on loading. The character of the fiber is altered, presumably by loosening

and throwing down some of its cellulose. Dyed linens in this style will probably make a popular fabric for ladies' caps for automobiling. Jacquard linens are to form a considerable feature in the Irish exhibits at the Franco-British Exhibition held in London this summer.

* * *

Claims are a serious trouble to the worsted trade at present, as usually they are in collapsed markets. Fault is found on the slenderest pretext and the debit notes lead to searching inquiry in the mills. The occasion brings out the spinner's old grievances against his overlookers. But probably the spinner himself is to blame if his men are as lazy as he says they are and as ready to take their chance of spoiling material rather than exert themselves. Where men stay long in one place trouble of this sort grows unconsciously and gives new managers serious work to do. In one or two large mills better yarn is forthcoming as the consequence of judicious removals of custom-warped men.

* * *

Although Yorkshire spinners as a rule do not sell direct to customers on the Continent some of them visit the Continental consumers of their yarn. The process is to be recommended, for lately one found a different yarn passed off as his own in Germany. Another found that the manufacturer who was supposed to have made the claim knew nothing of the $100 damages paid to the merchant on the faith of a letter in a language the spinner did not understand. These incidents encourage the producer to keep in touch with the consumer, albeit their business relations are through a commission house. Acquaintance is in the interests of both parties.

* * *

An important contribution to the controversy over wool bags is made by a Bradford manufacturer whose belief is that the packs ought to be black or blue-dyed so that jute fiber from them shall be distinguished clearly from wool. He dyed tares which had come from Australia, one black and one blue. An undyed tare was held in reserve and fiber from each was deliberately distributed over three lots of wool which were combed, spun and woven into dress serge separately and under particular injunctions not to remove any foreign fiber during the process. The uncolored jute was invisible in top, yarn or cloth until after piece dyeing, when it betrayed itself everywhere. The colored jute was clearly distinguishable when the materials were undyed and invisible after the cloth containing it had been dyed black.

Most wool is for black or blue dyeing, but it was necessary to see the effect of dark jute matter in goods stoved or delicately colored. Fears that the dark color would bleed and spoil its surroundings proved groundless. The foreign hairs were seen with ease and easily removed and the possibility of removing such either before or after dyeing was clearly proved. We are not told how black or blue bales are to be marked so that name, number and station can be read on discharge from ships' hold, but dyeing of the ground cloth would not make some marks more illegible than they now are on arrival from the Colonies. In case of need marks might be stitched.

* * *

A sum of $100,000 is ready to give Bradford a new textile school. From this outlay America may derive direct benefit. Young men trained for the greater part at public expense find their services cheaply rated by local employers. In particular, the combers' combines are blamed for offering graduates less than they can live upon. Finding no competition for his services the student not infrequently takes his training away and, sometimes, to the United States.

The hope is expressed that the $40,000 worth of plant that is to be bought may be employed in part to wash, comb and spin small lots of material that public-spirited manufacturers will send to be treated on commission. Bradford looks long at its money and does not overpay its technical teaching staff. The principal of a college in which the textile arts, engineering and minor trades are taught receive a salary of $2,500; the head of the textile school gets $2,125. The fee for day students is $67 a year and the State makes a contribution towards the expenses, which otherwise fall upon the municipality.

Negotiations with foreign patentees are still being carried on by landowners and local authorities near London and on both seaboards. Companies having a capital exceeding $100,000,000 have arranged for factory sites and there is some alarm in Germany over the prospective effects of the British Patent Act. A lenient interpretation of the clause concerning compulsory working is asked for. A treaty is advocated, similar to one existing between Germany, Italy and Switzerland, which would do away with the penalty of withdrawal of protection providing the patent were worked in a treaty country. But it is the compulsion which has made the Act popular in England and any tampering with that clause will bring down a storm. The Government is irrevocably committed to the clause for the present and the Opposition party would be still less likely to support a change. Working of inventions is compulsory in all large European countries but Russia, in all South American countries but Ecuador, in Japan and in Australia.

* * *

Outside most English mills in which woolwashing is done, such tanks may be seen as are shown in the accompanying photograph. Seeds from the machines run into the tanks on the higher level or into a trough connecting with them. Common sulphuric acid is used to "crack" the grease which floats as a grey scum. Discharge is made to the lower level by an L pipe, adjustable to the height of the liquid in the tank. The water oozes through a bed of clinker below leaving solid grease, mixed with sand and fiber, on the bottom of the lower tanks. This is shoveled into burlap wrappers and conveyed to a press. The pressure applied is hydraulic or manual pressure exerted by a wheel and the steam-chest sides of the press give the heat necessary to make the fatty constituents of the solid matter flow. These trickle from the press in the form of a brown grease, solid when cold, which fetches now some $40 a ton.

At $60 a ton or thereabouts the operation pays for itself and leaves a profit. The dry, dark residue left after the oil is expressed fetches a price as manure. The watery effluent from the lower tanks passes away, preferably over other filter beds, to a sewer or stream and where proper care is taken this effluent is clear and pure enough to satisfy our Rivers' Boards. In working a small plant, such as that shown, one man is em-

TANKS FOR RECLAIMING WOOL GREASE.

ployed. It is observable that in this scheme the water flows by gravitation throughout. The division of upper and lower tanks into these is purely for convenience in working and cleansing.

* * *

If certain representations by operatives attain their object exhaust-fans will become compulsory in rooms in which cotton carding is done. The question arises of the efficiency of any form of apparatus for carrying off dust before it reaches the operative and probably there will be a good opening for inventions. In default of compulsion to use fans the operatives propose to agitate to make diseases provoked by dust subjects for compensation to the victim. In the waste-silk mills when flat dressing frames are in use there is another dust problem which may be made urgent.

* * *

A system of mill heating from the exhaust pipe of gas engines is to be attempted in the

new Ena Mill at Atherton. The 100,000 spindles are to be turned by a 1,400 h. p. engine of two-cycle, double-acting type in which every stroke is positive. The builder's guarantee is to run with 1 pound of coal per i. h. p. per hour and thus to save from $4,000 to $5,000 yearly on that head alone. The engines appear to have done well in another cotton and a flour mill. A chimney is dispensed with and also the smoke which disfigures our mill towns.

THE GOLDSBROUGH, MORT PROCESS OF PACKING WOOL.

During the past year the Bradford worsted trade has been vigorously agitating the question of improving the method of packing wool so as to prevent the twine and ravelings from the burlap from getting into the

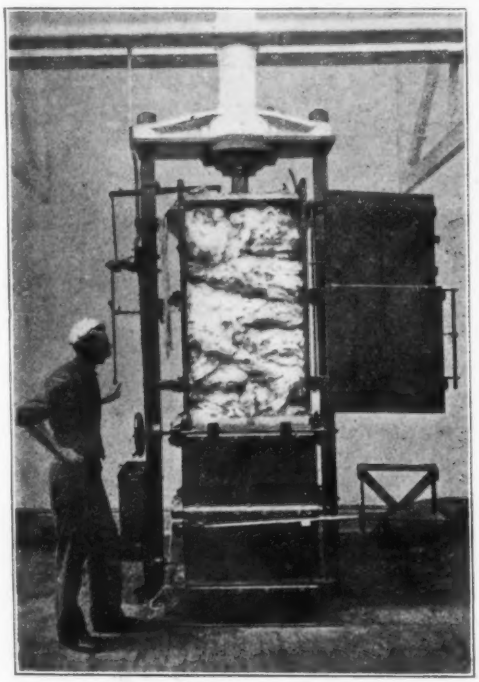


FIG. 1.

wool itself. A conference of wool growers, dealers, spinners and weavers was held a short time ago at Bradford and the growers were taken through the mills, where they had an opportunity to see the damage to the goods that resulted from bad packing of the wool. In order to meet the objections to present methods of packing Goldsbrough, Mort & Co., wool dealers at Melbourne, Australia, have developed a new method of packing, which they describe as follows:

During the Bradford conference it was estimated that the cost of labor, as well as damage to goods in the made-up article on this account, amounted to about £250,000 per annum, and it was urged that measures should be taken to obviate the trouble. It was shown that the difficulties arose first of

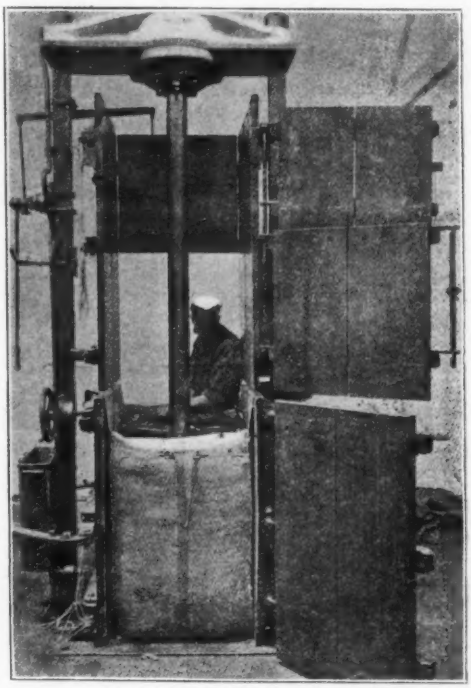


FIG. 2.

all at the seat of production, where grower used faulty packs in baling the wool. Again, in the warehouse, where the wool was opened in the show rooms for inspection, and afterwards in repacking, and finally in again being opened at the factory, there was an endless chain of opportunities for twine and jute to mix with the wool.

Since the Bradford conference Goldsbrough, Mort & Co., Limited, the well-known Australian wool brokers, have very

wisely given their attention to the subject, and they have evolved a new process of packing and heading the bales which will entirely prevent twine from entering the wool.

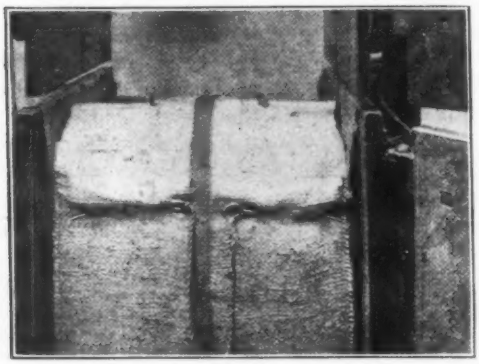


FIG. 3.

Moreover, there is a large saving in twine and labor in comparison with the old system. Demonstrations have been given in Goldsbrough, Mort & Co.'s warehouse in Melbourne, and the new process has won the entire approval of the trade. Its simplicity and effectiveness will be observed from the accompanying illustrations, and its general adoption throughout the wool-growing centres is estimated to have a far-reaching effect on the trade in Australia. Growers will welcome the saving of labor and twine which will result from the new process.

FIG. 4.

The accompanying illustrations will show exactly how the wool is packed by Goldsbrough, Mort & Co.'s new process. Packs with prepared heads and loose tops must be used for the purpose. The pack and the loose head are placed in the wool press in the usual way, the packs being cut down fifteen inches from top, and no further cutting is required. Our first illustration shows the front elevation of bale, placed in position, with loose cap on "monkey" in wool press, ready for packing.

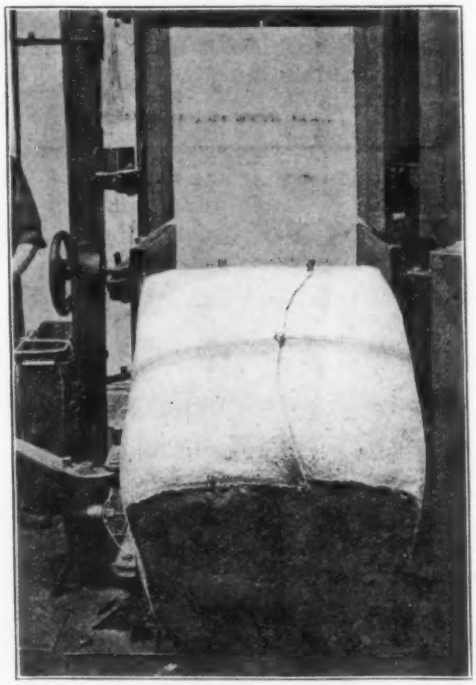


FIG. 5.

After the bale is pressed, and the "monkey" is down, the front and back flaps are thrown temporarily over the bale. The head is then firmly secured to the bale by two steel skewers (as per illustration, No. 2) (sets of steel skewers can be obtained from

Goldsbrough, Mort & Co.), both front and back, at the same position as the stitching is done under the old system. While the bale is in this position it is not necessary to cut down the four corners of the bale, even if they project as much as six inches over the "monkey," as it will be seen that, when the skewers are released, the corners fill up and form a stiff, even surface, making a much superior packing to the old bale.

The "monkey" having been released, the front and back flaps are tacked together in two places across the top of the bale, about eight inches from each side. The side flaps are then brought the usual way and tacked and lock stitched, as per illustration No. 5, and the skewers may then be released from the bale.

The chief feature of the system is that no twine or string can possibly enter the bale, the only stitching necessary being on the two outside flaps.

There is also a great saving in twine, as nine bales can be treated with the same quantity of twine which was under the old system used on one bale. Another important feature is that, by simply cutting the stitching on two outside flaps, the bale is ready for inspection by the wool valuers and buyers.

It is essential that all bales be branded on the flat—that is to say, on the sides, and not the front, disclosed as the operator looks into the wool press.

FIG. 6.

Woolpacks with loose tops and sides cut down 16 inches are required, no further cutting being necessary. The cost of these is only a trifle more than those with fast tops, the price this year being somewhere about 2s 3d each.

The skewers can be supplied at 7s 6d per set of four, made of the best toughened steel, and specially shaped.

In using a Ferrier or other hand-press, a false bottom of at least 5 inches is required, and the monkey should be put down 3 inches below the bottom of the cut in the pack.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, any pertinent inquiry pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring ,not for publication, but as an evidence of good faith.

For reply to questions that are not of general interest to readers of textile journals, such as those relating to the composition of yarns, analysis of fabrics, etc., we will charge the enquirer with the cost of the investigation.

Variation in Size of Yarn.

Editor Textile World Record:

Please advise me what variation from correct weight ought reasonably to be allowed from day to day on undyed, ring spun hosiery yarn, say No. 10. Bradford (992).

This question, although apparently simple, is in fact involved in many difficulties and it is impossible to give a general answer that will apply to all cases. The wide variations in the humidity of the atmosphere in different parts of the country causes unavoidable variations in the yarn. The variations for one mill might be kept in fairly uniform limits, but these could not be accepted for any other mill in a different district. Dorset.

It would be a difficult matter to draw a hard and fast line as to the variation to be allowed on No. 10 ring spun yarn, from day to day, as there are so many minor details to be taken into consideration, circumstances being different in every mill.

The man who has care of the spinning department, to be successful in keeping his yarn the correct numbers, should not follow any set rule in arriving at the proper weight to spin his yarn, but must use his own judgment, based on the condition of his spinning rooms. I have known cases where two rooms in a spinning mill have had frames spinning the same numbers, from exactly the same hank roving, on precisely the same make of machine, yet the same gears would not produce exactly the same numbers of yarn; the variation being caused by the difference in the temperature and humidity of the respective rooms. This is undoubtedly the most important matter to be considered in arriving at the correct weight to keep the yarn in the spinning rooms from day to day.

The humidity will vary in sympathy with the outside atmosphere, and on damp days our friend will need to spin his yarn lighter to the extent of as much as 5 per cent., or it will run too coarse.

Yarn will usually run heavier in the morning, when the machinery and rooms are cool, than in the afternoon when everything has got warmed up. Consequently, it is requisite to make the yarn half a tooth heavier in the second portion of the day, in order to keep the day's production as near the correct numbers as possible.

To obviate this variation and prevent the necessity of making so many alterations in the gears, the writer adopted the system of having the spinning room floors sprinkled with water at intervals during the afternoon, which increases the humidity of the rooms and tends to keep the yarn throughout the day as near the correct numbers as possible, and also to improve the working of the yarn to an appreciable extent. The better and more up to date plan is to install humidifiers (the initial cost being rather heavy) by which means you can increase or decrease the humidity of the rooms as may seem desirable.

Humidifiers are certainly a great assistance in attaining regularity in the yarn in the spinning room, though if they could by any means be fixed underneath the frames instead of over the top, which would allow the damp to ascend through the roving and yarn, instead of descending on to them, the result derived would be more satisfactory.

It is also necessary for the spinning overseer to know whether the product is to be dampened after leaving the spinning rooms, and, if so, to what extent, as he will have to spin his yarn lighter to compensate for the amount of moisture to be added. Even if the yarn is not to be conditioned, but is to be kept in a cool place for several days before being used, it will gain considerably in weight on coarse numbers, which gain will have to be allowed for in spinning the yarn, or the yarn will be too heavy.

Another point to be remembered is that soft spun yarn will absorb moisture quicker and to a greater extent than hard spun yarn, so that it requires practical experience to enable the overseer to keep the yarn the correct number, these thick yarns being greedy absorbents of moisture.

On very hot, dry days the yarn will require to be spun heavier than on humid days, or it will run too light, not only be the wrong weight, but will spin badly, be a source of loss to the employer through decrease in production, deterioration in the quality of the yarn, also extra amount of waste, and cause trouble and dissatisfaction to the employes by keeping them too much on the hustle piecing up the broken threads. It behooves the man in charge to carefully watch these matters.

Testing the yarn from each spinning frame every morning and afternoon will show how it is running. It can then be made heavier or lighter as required. I should advise weighing the roving to see that it is kept on regular weight, because if it is coming irregular from the card room it may cause numerous changes in the spinning frames, which could and should be avoided.

Provided the roving is manipulated right, the spinning overseer should not have any serious difficulty in keeping his production the correct weight. By closely watching the several details heretofore enumerated, he will gain practical experience that brings success. Denbigh.

Defects in Bleaching Knit Goods.

Editor Textile World Record:

We are knitting 10s carded peeler, 1 and 1 rib, which we bleach and make into ladies' underwear. We use a patent improved boiling kier equipped with vomit pipes. The kier is 5 feet in diameter, 6 feet high, and of 1,000 pounds' capacity. We are loading the kier with 24 rolls of cloth to a batch and the cloth rolls will average about 40 pounds each. We load the kier evenly, tramping it down well and wet each layer down with a hose as we proceed. The whole is covered with burlap and weighted securely to keep it in position. The kier is filled with water to cover the goods and we add 5 pounds of palm oil soap to each 100 pounds of goods and 1 pound of caustic soda to each 100 pounds of goods, dissolving this soap and caustic and putting it in the kier after the liquor has come to a boil, which takes about 30 minutes. We then close the kier and boil for 7 hours at 15 pounds' pressure. We then fill up the kier a couple of times with clear cold water and goods are taken out of the tub and thoroughly rinsed. We have trouble in getting a uniform bleach and are sure that the cloth in the kier is not getting uniform treatment. We attach an unbleached muslin ticket to every roll, giving roll number, width, weight and other data, marked with indelible ink. The swatches on upper layers that come out of the kier are very faint, showing presumably the action of the caustic. The swatches on the bottom rolls are not so affected. One would naturally conclude that the solution was easy and that all we had to do was to add more caustic. This we have done, but find it makes the cloth very hard and harsh, which is a very serious objection. The fact that the rolls out of the same kier will not bleach alike in an equal length of time compels us to cut our sleeves out of body cloth to ensure a perfect match in color, which, as you know, nets us a vast amount of unnecessary waste. Garfield (978).

The chief difficulty is caused by not treating the goods with the proper compound in the boiling process. When the palm oil unites with the lime of the caustic, there is formed an insoluble oil, and in that way the goods are boiled in an insoluble solution. If "Garfield" will follow the following directions I have no doubt but that he will have satisfactory results. Put the goods in a kier and have the water about 6 inches from the top. Bring to a boil, adding 1 per cent. caustic to each 100 pounds of goods and 1 per cent. assistant bleach to each 100 pounds goods. Dissolve thoroughly. Close the kier and boil for 5 hours at 15 pounds pressure. Begin washing as soon as outlet valve is open and continue washing for three-quarters or one hour. This process of washing prevent foreign substances, accumulated by boiling from causing spots on goods.

Hancock.

More uniform work is obtained in bleaching by boiling out goods in an open kettle or roll dyeing machine, but there is no reason why even work cannot be obtained by boiling in a kier. Some of the causes for uneven work are not having enough liquor in the kier, drawing the liquor before flooding the kier, and running cloth into kier dry. It looks as if the goods in question were boiled too long and at too high a pressure. I have not used caustic soda for a number of years as I find ammoniated alkali gives better results and leaves the goods softer and cleaner. Use 2 per cent. of alkali and 3

per cent. of soap. Run the goods through the machine in a continuous chain, to wet out. If the goods are run into the kier dry, it would be well to close up the man hole, waste pipe and open outlet valve below; blow the steam through for about 20 minutes, as this forces out the air, wets and evens out the goods. Then fill up the kier, weight down the goods and boil for 2 1/2 hours at 5 pounds pressure with 2 per cent. of alkali and 3 per cent. of soap. See that the goods are kept well under water and when they have been boiling for 2 1/2 hours, shut off the steam, open the waste pipe, let the pressure run down, flood the kier before drawing off the liquor, draw goods into machine and rinse well. Have a tank with a solution of lime at about 1 1/2° below the machines so that when the goods are bleached the lime can be run back into the tank. Wash out lime and scour, then run lime back into tank and wash until the water is neutral. I have had tanks sunk into the ground so that when the goods are bleached the lime and sour can be run back into the tanks and be ready to use again.

I visited a large bleach and dye house some years ago, where they bleached from 30 to 35 tons per day in 5-ton lots and they had a lot of trouble with uneven bleaching. In this case the bleacher had been letting the liquor get too low and then drawing the liquor off before flooding the kier, which was one cause of the difficulty. I have also found that the low pressure kiers will give more satisfactory work than is possible with high pressure kiers, and that a sudden change from boiling to cold water will make the goods feel harsh, will give them a cloudy appearance, and will throw a scum to the surface of the water, which when settled on the goods causes a spotted appearance.

I have bleached knit goods by drawing the cloth from the kier, running through a string washer, then through a solution of lime at 1 1/2° and plating down in a bin. Let stand for 6 to 8 hours, run through machine to wash out lime, through sour at 1° and let stand for 5 hours, then rinse acid out thoroughly. This method will give a very uniform bleach, but is not suitable for all kinds of goods.

At one mill I used a wooden vomit kier, but we had trouble with stains on the goods. Then I used an open kier for goods made in the garment, and a roll cloth dyeing machine, never taking the goods from the machine. This gave excellent results. The goods were boiled for one hour.

The trouble is often caused by uneven knitting, as two rolls of cloth, one coarser or one knit heavier than the other will not bleach the same shade. Devon.

The process described by "Garfield" is all right as far as I can determine. The quantities of ingredients are sufficient to give the desired result. The goods might stand more caustic, but that would cause the harsh feel of which he complains. A larger amount of soap would help to neutralize the action of the caustic. I would advise "Garfield" to be careful about adding caustic to the boiling liquor, otherwise he may get into even worse trouble and be compelled to lift the goods out with a fork. It is difficult to locate the exact causes of "Garfield's" present difficulty without being on the spot and observing all the conditions. Great care must be taken to prevent rolling of the goods, careless winding will make some of the rolls too tight, others too soft. The liquor will penetrate the soft rolls more easily, thus causing variation between the different rolls. The difficulty may also arise from improper packing of the kier. The rolls must be packed even and level on their ends so that the liquor will penetrate the center of the roll during the process of boiling. The goods should be thoroughly saturated. It often happens that the goods when first covered will absorb enough liquor so as to lower the level and expose the rolls. The kier should not be packed too tight, room should be left to allow for the swelling of the rolls and thus enable the liquor to penetrate the goods more easily. The liquor should not be boiled too quickly or at too high a pressure. It is better to boil it two or three hours longer and at two or three pounds less pressure. All these things will contribute to uniform results.

The fact, indicated by the appearance of the ink, that the goods are boiled more at the top than at the bottom of the roll is not

the result of the caustic being too weak, but is due to the boiling being done too quickly. The pressure in the kiers is downward; the liquor is forced up the vomit pipe and strikes the bonnet which spreads it over the kier. It is then sucked down through the goods ready for the discharge through the vomit pipe again. I am confident that if "Garfield" will follow the suggestions I have made he will obtain better results. Delco.

Conditioning Ovens.

Editor Textile World Record:

I have been much interested in the discussion of conditioning textile materials and would like to know where the testing ovens can be obtained and at what price. Hampden (982).

The latest drying oven brought out in England was designed at the conditioning house of the Manchester Chamber of Commerce by J. H. Lester and is manufactured by Morton & Edwards, Staleybridge, England. Special attention has been given to securing a uniform temperature and ventilation during drying.

This oven is made in two designs: (a) With drying space about 26 inches by 26 inches. This has a steam jacket and may be heated either with gas burner at the base or by separate steam supply. It requires a fan to draw off the moisture though this is not always necessary. The temperature of the oven cannot rise above a predetermined point, the steam jacket being provided with a dead weight safety valve. Steam or gas consumption are kept down to the minimum by the use of a proper regenerative system. The sample is suspended in the drying space from suitable scales. (b) Similar oven to above but smaller and with more delicate scales. Cost about £25. (c) Small oven for testing cops. Cops must be broken up to allow of complete abstraction of moisture in any case in any oven. This is provided with steam coil instead of jacket. Drying space about 10 inches by 10 inches. Cost about £18. Requires no fan and has maximum temperature control.

Among other English manufacturers and dealers in conditioning ovens are: Goodbrand & Co., 19 Victoria St., Manchester, England; S. Barket, Goit Side, Thornton Rd., Bradford, England; John Nesbit, Market St., Manchester, England. On the continent: Louis Schopper, Leipzig, Germany. Harry Baer & Co., Zurich, Switzerland, are makers of moisture testing ovens.

Every large buyer of textile materials should provide himself with apparatus for testing the condition of the material as received. It would be a mistake, however, for him to rely entirely on his own tests. They will serve a useful purpose in indicating whether the degree of moisture is far above or below the proper standing, but in case of dispute between buyer and seller both parties will necessarily be compelled to refer the matter to an impartial third party who is provided with the necessary apparatus for testing the degree of moisture. The regular conditioning house, with the management independent of buyer or seller is a necessity for the general conditioning of textile materials. The use of testing ovens by individuals, while of great value, cannot take the place of such independent testing establishment.

"Penny Wise and Pound Foolish."

Editor Textile World Record:

I wish you would draw the attention of manufacturers to the wretched habit of some of them, who use rough lap boards for cloth. It frequently makes from five to seven yards on the inside of the pieces almost unmerchantable. By using a little more care and properly papering the boards they would save the jobbers no end of annoyance and themselves a lot of claims.

Cloth Examiner (984).

We have frequently called the attention of manufacturers to the damage resulting from this very bad habit. There is no excuse for it. If manufacturers don't want to take the bother of papering the boards they should insist that they get properly finished cloth boards, or they can procure patent cloth boards made of paper and wood like those made by Chaffee Bros. Co., Oxford, Mass., which need no covers and which are very much lighter than wood boards and equally strong, or the specially designed paper cloth boards such as are sold by Richardson Bros., 51 Franklin St., New York, who have given special attention to the textile trade and whose cloth board overcomes the objections of our correspondent.

KNITTING DEPARTMENT.

For Knitting Mill Machinery, Equipment and Supplies, see pages 235 to 253. Also Buyers' Index.

THE KNIT GOODS SITUATION.

There is little, if any improvement in the demand for knit underwear since our last writing. There have been some lowering of prices during the past month, but we cannot learn of it being very effective in the matter of getting orders; but has rather worked to the contrary in that it has had the effect of causing buyers to lose what confidence they had and to have made the situation somewhat worse, if that be possible. It has also demonstrated conclusively that the cutting of prices does not sell merchandise when other conditions are all against it. Buyers are not particularly pleased to see reductions made, as it means that where concessions of 25c. per dozen from the early prices are given, he is obliged to take 25c. off from his price, so it does not increase his margin, but decreases his sales, and this sometimes takes the garment away from the so-called popular price range and is, therefore, a positive detriment. Aside from that, every shilling reduction on today's prices means a shilling reduction on the value of any stock that he may have carried over from last season. Of course, there are exceptions to this rule, and one of them is the new order of things by which the discount on children's goods has been made 20 per cent. off in a number of cases with the same starting price and rise on each size. This will probably result in little better margin being obtained by the jobber than when the discount was 12 1/2 or 15 per cent.

So far as we can learn, jobbers' stocks are still very large. They all claim to have carried over a great many cases of men's fleeces and ladies' six-pound ribbed goods which were very slow last fall, and on top of this stock, buyers went into the market last June when things looked rosy red and bought heavily of spring goods, and conditions have been against a good business all of the present year.

The weather conditions during the first three weeks of May were decidedly against the movement of any great volume of spring goods and it was not until about the 25th that business became real active. A few weeks of warm weather now will do wonders in the way of moving stocks on hand, especially for the jobber, as it is fairly well understood that retail stocks are light.

Some little talk is being indulged in by manufacturers as to the advisability of making up goods for stock to take care of the demand that might come in the months of September and October, but it is to be hoped that there will not be many who will adopt such a policy. The putting up of any stock goods would, in our judgment, bring about a very serious condition. Most of the buyers would become imbued with the idea that they could get goods at any time, and it would become doubly hard to get advance business in the seasons to come.

The prices on wool underwear have not been changed, although some manufacturers are agreeing to improve the percentages of some of the numbers on order. Most of this class of manufacturers have a fairly good proportion of their production sold and do not appear to be worrying to any extent in regard to their business.

Radcliffe Bros. of Shelton, Conn., have brought out a new number in two thread natural wool garment at $7.50 net, and had it been in the market early, would undoubtedly have been well taken care of in regard to orders.

The mills making summer goods exclusively have been scurrying around some for the past month, looking for business to keep their organization together and some low priced merchandise has been offered. In a great many cases this has only had the effect of making buyers feel sore, as they have plenty of goods on hand and now find they can duplicate their stocks at from 7 1/2 to 10 per cent. less than they own the goods at.

Men's 5-pound balbriggans which were sold early at $2.20, may now be had as low as $1.90, and 4-pound goods as low as $1.65. This makes the 3 1/2-pound garment delivered to some of the Western jobbers last September and October at $1.95 look like the proverbial "thirty cents."

Ladies' shaped ribbed goods sold early at $2.00 and $2.10 are now freely offered at $1.85 to $1.90, and while there is not so much change in the price of ladies' straight goods, we find that those numbers that sold at $1.90 to $2.00 may now be had as low as $1.75 to $1.90.

Combination suits for summer wear are increasing in popularity for all ages and

sexes, and it is noticed that there is a strong tendency for the goods made on spring needle machines at the expense of the tuck stitch goods. It is reported that the Atlas Underwear Co., one of the largest producers of men's suits in the country, will have a complete line of spring needle goods for next year.

We illustrate here a new garment made by Julius Kayser & Co. This idea is being shown in both vests and combination suits. It is described as "elegance and economy combined." These garments have the Italian silk top to the waist line and the balance of the garment is made of a mercerized ribbed fabric. They are shown in plain tops; also in a wide range of fancy embroidered patterns and we show one of the medallion patterns which has been one of the best selling numbers. These vests get to the retail trade for $2.50 a garment.

HOSIERY.

Some little encouragement may be obtained from the hosiery end of the business from the fact that orders are coming in more freely than for some years past, although the revision of prices on some of the more important lines of fleeced goods have just taken place.

The Ipswich people have made a reduction of 2 1/2 to 5c. below prices made early in the season, and some other manufacturers have made cuts of 7 1/2 per cent. on some numbers.

It seems to be the impression among buyers that prices are now at a low ebb and that, owing to the fact that it is now so near to the season for actual demand of the goods, manufacturers can get orders at today's prices, sufficient to take care of the bulk of their production. It is still a buyer's market; nevertheless the tide is turning to a better condition of affairs and prices on more desirable lines are being held firmly.

Tans have the call in plain and embroidered goods and anyone with tans in stock in any quality whatever, can find ready buyers. Fancies, principally embroidered goods, are showing some signs of improvement now that low shoes are becoming more in use. Copenhagen blue, which is described by one writer as "Alice Blue gone into consumption," is in good demand and makes a very handsome contrast to the tan and ox-blood shoes now so popular.

Manufacturers of lower priced lines are somewhat chagrine at the trend of affairs in the Chemnitz market. A great quantity of 25c. goods are being sent to this side and this is a source of competition that our domestic manufacturers have not been obliged to contend with in the past two or three years to any extent.

Prices on the low end of seamless goods

have dropped 5 to 10 per cent. from prices paid last June. A 1 lb. 8 oz. stocking sold at 70c. is now being quoted at 65c. 2 lb. goods with double soles that sold last year at $1.00 are now being offered at 90c. 1 lb. 10 oz. goods made of combed yarn are being offered at $1.00. 176-needle half hose now being sold at 65c. against 72 1/2c. last season.

Prices on wool hosiery remain unchanged, but a number of manufacturers are writing to their trade that their qualities are to be improved to make up for the difference in prices. As jobbers' prices are fixed on this class of goods, it seems to be a good plan to improve the qualities and let the prices remain the same.

Wanted: Address of Russian Inventor.

Editor Textile World Record:

Can you give me the present address of Abram E. Tscherniak, a Russian, who invented a circular loom? I am informed that he has recently visited the United States. Lexington (995).

We shall be pleased to have any one who may know of Mr. Tscherniak's present address send us the information that "Lexington" desires.

The embroidery yarns used at St. Gall, Switzerland, run from 40s to 240s, and are always ply yarn. Formerly the main number was 120s 3-ply, but as 60s 2-ply is nearly the same size and cheaper, this is now the predominating number.—Special Agent W. A. Graham Clark.

Special Agent W. A. Graham Clark states that the main advantages of Switzerland in the manufacture of embroidery seemed to be, first, the inherited aptitude of the St. Gall people for designing and manufacturing embroideries, which is fostered and aided by the concentration of the business in one place where everybody thinks and dreams about nothing but embroidery; second, facilities for obtaining, at reasonable prices, high grade yarns and cloths; third, extra fine water for bleaching; fourth, cheaper first cost of machinery and buildings; fifth, cheap labor. The greatest advantage is undoubtedly the cheap labor.

A KNITTING MILL WITH OR WITHOUT A SPINNING PLANT.

C. O. TERWILLIGER,
Supt. Underwear Dept., Lebanon Mill Co.

The events of the past three or four months have done much to impress some interesting facts upon the minds of the knitter and spinner.

The former has plenty of yarn to take in on the balance of unexpired contracts placed when the country was at its height of prosperity. Now he has no orders he can fill at a profit. The latter is facing much the same problem, that is, cotton is practically the same price as before the panic, and knitter and weaver unwilling and unable to pay the spinner's price.

While the above conditions are not normal, still they may be taken to represent an exaggerated condition that always confronts them.

Suppose we take a more normal condition: The knitter must buy 1,000,000 pounds of yarn throughout the year. If he does not place the entire contract at one time, just before or after he sells his output, he must determine when it will be to his advantage to do so, which of course is a matter of speculation. If he buys from hand to mouth, the outcome must also be the result of speculation.

We do not wish to go on record as stating that the knitting mill owning its own spinning plant will eliminate all the speculative element from the cost of its yarn. On the other hand the knitting mill spinning its own yarn will certainly do away with one of two factors controlling the price of his yarn, viz., the price of cotton and the spinner's manipulation of the market irrespective of the price of cotton.

The knitter of underwear does a reasonable business. On light weight goods the year's business is usually booked during the months of May and June. If all element of speculation is done away with, the supplies must be all contracted for as soon as possible after the year's business is taken. It now follows that the condition of the yarn market at the time determines the weight

and selling price of the underwear so far as the manufacturer is concerned. Strange to say, the underwear buyer takes the price of cotton as a basis, which we believe is quite correct.

There may, at this time, be a vast difference between the price of yarn based on the price of cotton and the selling price quoted by the spinner at this time. In other words, the knitting mill spinning its own yarn would be in a position to determine the cost of its year's supply of yarn much more accurately than if it were dependent upon a spinning mill.

It was only last year that yarn prices were much higher proportionately than the price of cotton. We have heard it stated that spinning mills will at times furnish certain numbers of yarn at cost in order to keep the mill balanced. If this is true, it is safe to say that the money making numbers must sell at a price to average the mill's profits. Of course this applies more particularly to those mills making a wide range of numbers, since many concerns attempt to spin a range of only six to ten numbers, say 18 to 24. The difference in these would be so slight that it could not afford to run 18s at cost and take profit only on the 24s.

Then, too, another marked difficulty would be overcome; that is, a so-called corner often occurs in a certain range of counts, and quite frequently this affects the knitting counts.

The mills making staple underwear use certain fixed sizes of yarn for their year's supply. For instance, take a medium sized balbriggan underwear concern making 1,000 dozens a day. The mill would probably use every day 4,000 pounds of 22s and 500 pounds of 20s. The spinning plant would run day in and day out on these numbers in the proportion of one pound of 20s to eight pounds of 22s. No part of this spinning mill would be idle due to changes.

Of next importance comes the question of the method of delivering the yarn to the knitting machines. At present there are two general methods: on cones, and knitting bobbins. He may buy the yarn on cops or cones. If he takes the former, the cost of winding is a little more than on the cones. If he gets cone yarn he must pay extra for it; much more than would be offset by the cost of winding.

While opinions may differ, knitters generally prefer mule spun yarn. However, it is a fact that some of the best yarn made in this country comes from the spinning frame. It is just here we make our point; that is, a good frame spun yarn could be made and wound on the knitting bobbin direct from the bobbin of the spinning frame. This must result in a saving of one-half cent to 1 1/2 cents a pound, according to the number used by manufacturers of staple underwear.

The question of the saving in freight is quite obvious and needs no further comment. A saving of from one-eighth to one-half cent a pound is made, depending upon the distance between the consumer and producer.

Management, clerical force and a share of the general mill expense is saved, but as this would differ according to conditions, we have not estimated the actual savings.

Probably the most important advantage is to be able to correct at once any defect in the yarn. Variations in twist cause the knitter loss as well as badly wound cones, cops, etc. To the spinner this statement may seem ridiculous, yet it is a fact only too well known by the knit goods manufacturer. Variation in the count of yarn causes serious loss. Underwear is usually sold as having a certain weight on a given size. It is to the advantage of the spinner to have the yarn weigh heavy, and for this reason the variation is on the heavy side. This means extra material in the knit garments and consequent loss to the knitter.

The embroidery stitcher in St. Gall, Switzerland, will make, say, $8 to $12 a week, in New Jersey $18 to $30; the girl overseer in St. Gall will be paid from 38 to 57 cents a day, in New Jersey from 85 cents to $1.35; the shuttle filler in St. Gall will be paid 38 cents a day, in New Jersey 75 cents. This is quite a difference and is especially important on fine embroideries, where the labor cost is really the controlling factor.—Special Agent W. A. Graham Clark.

A TAKE-UP FOR CIRCULAR KNITTING MACHINES.

The object of this device, recently patented, is to provide a positive take-up for knitting machines, by which the mechanism will be moved intermittently for a fixed distance. It is driven by a ratchet and pawl, while a tension device rests against the fabric as it passes to the tension roller. A guard, which normally holds the pawl inactive, is controlled by this tension device. When the slack of the goods reaches a certain point, the tension device has moved sufficient to release the guard and allow the pawl to act upon the ratchet and move the tension device and the take-up roller an amount sufficient to take up this slack. During this movement the tension device is moved by the fabric, in the opposite direction, an amount sufficient to again bring the guard into action and move the pawl out of action.

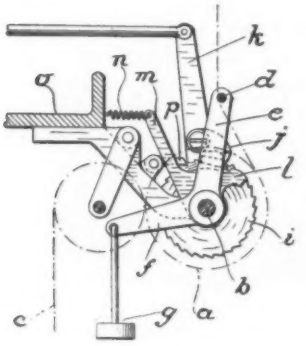


FIG. 1.

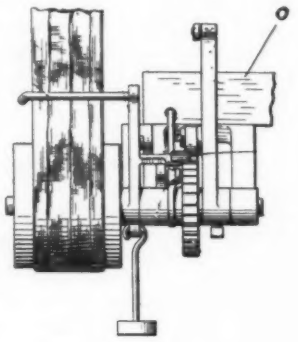


FIG. 2.

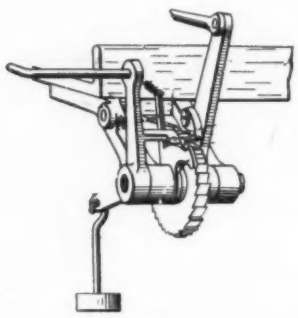


FIG. 3.

Fig. 1 is an end view of the take-up device with roller indicated in broken lines. Fig. 2 is a front view. Fig. 3 is a perspective view with take-up roller omitted.

(a) is the take-up roller, revolving with the shaft (b). (c) is the fabric. (d) is the tension arm, connected to the arm (e) loose on the shaft (b). (f) is a crank arm connected to arm (e) and having connected to its outer end, the weight (g). The effect of the weight (g) is to move the arm (d) toward the fabric. Connected to the arm (e) is the guard or shield (h) which, with the fabric taut, is slightly above the teeth of the ratchet (i). When the fabric begins to slacken, the arm (d) moves backward until, with a certain amount of slack, it will have moved the shield or guard (h) backward so as to uncover the guarded tooth.

(i) is the operative pawl for the ratchet. This pawl is pivoted on the arm (k), which is reciprocated by a mechanism not shown.

When the fabric is taut, the guard or shield (h) holds the pawl from action, but when the fabric reaches a given slackness, the shield is moved backward and the pawl becomes active, moving the ratchet and the take-up roller, both revolving with shaft (b) an amount sufficient to take up this slack. By this arrangement the take-up roller is positively driven, but still its movement is dependent upon the feed or making of the fabric. The advantage of moving the take-up roller by a weight or spring is retained while the defects of non-positive driving are avoided.

To avoid the effect of the pawl, in its idle reciprocation, striking the face of the tooth in advance of the tooth masked by the tension device guard, an independent guard (l) is connected to the arm (m), to which is connected one end of the spring (n), the other end being connected to the frame of the machine. This guard is normally held by a spring (n) in such position as to mask the tooth of ratchet (i) in advance of tooth masked by the tension device guard, and extends toward this tooth so that the rear of this guard is in alignment with the tooth masked by the tension device guard, and is struck by the pawl when the tension device guard is released. Thus during the idle play

of the pawl both the tooth, guarded by the tension device guard, and the next tooth forward are guarded. When the tension device guard is released the pawl moves this independent guard forward against the action of spring (n), which in the backward movement of the pawl, returns the independent guard to its proper position.

The distance between the ratchet teeth and the movement of the tension device to release the tension device guard are adjusted so that the pawl will be rendered active with the proper amount of slack of the goods, and the active movement of the pawl will cause the ratchet to move sufficiently only to take up that slack. (p) is the holding pawl to prevent the ratchet moving in the opposite direction.

A NEEDLE PROTECTOR.

This device has for its object to protect the needles of knitting machines against damage caused by knots, lumps or other defects in the yarn as it enters the machine. Fig. 1 is a plan of the dial cap of a circular machine equipped with the new protector; Fig. 2 is a side view of a portion of the knitting head; Fig. 3 is a side view of the protector, showing its position in relation to the needles.

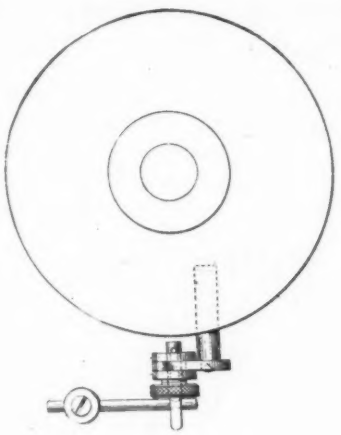


FIG. 1.

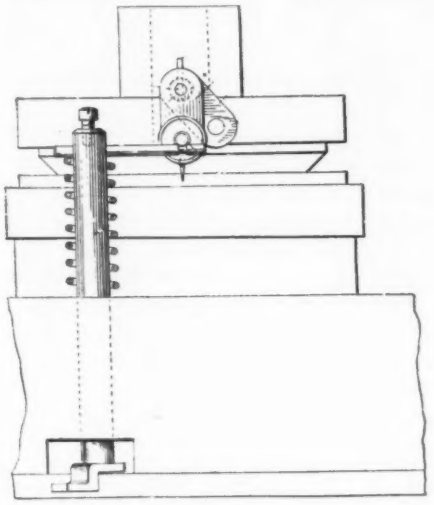


FIG. 2.

The needle protector comprises a finger, 4, consisting of a straight rod or wire extending vertically through an opening of a pin which extends through a pair of depending arms arranged parallel with each other and located upon opposite sides of an arm which is attached to and extends upwardly at an inclination from the bar, which is inserted horizontally in an opening in the dial cap or cam support. The arms are pivoted to the upper end link and hand vertically from their pivot connection.

The pin carrying the detector finger is screw threaded and receives a nut, so that by turning this nut the pin may be drawn through the openings in the arm and draw the side of the finger firmly against the rear or inner face of the innermost arm to clamp the said finger or wire in place. This wire or finger, as shown in Fig. 3, hangs so that its lower end is in close proximity to the needles. If any lump or knot presses against the needles the detector finger will strike them in the revolution of the machine and the finger will be pressed aside from the vertical position so as to cause the operation of the stop motion connections which may be of any suitable character.

For controlling the stop motion connections a vertical extending post movable vertically in the cam ring and pressed upwardly normally by a spring is employed,

the post carrying an arm extending laterally and having a groove extending circumferentially, in which an extension of the detector clamping pin lies when the detector mechanism is in normal position ready to be operated. This laterally extending arm is adjustably connected with the vertical post by a set screw.

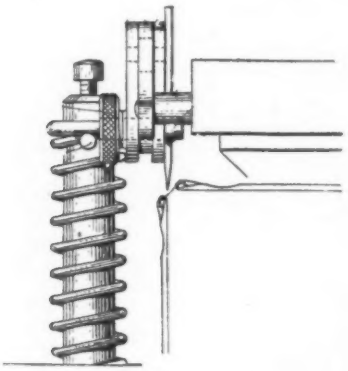


FIG. 3.

The lower end of the vertical post has an arm extending out through an opening in the cam cylinder or ring. This arm is adapted when in a certain position to operate the stop motion connections. In the present arrangement the arm normally lies in a low plane, but when the detector finger is pressed aside by a lump or knot at the needles the extension of the pin will move laterally out of the groove and the arm and post will then be free to rise under the pressure of the spring. When the post has raised the arm will then lie in the path of the finger of the stop motion connections so that in the revolution of the machine the stop motion and finger will be operated to stop the machine.

The point of contact between the upwardly pressed arm and the holding pin or extension is directly under the pivot point of the links. While a certain and sure retaining device is thus provided against an upward movement of the arm and post, it is evident that upon a very slight movement of the pin to one side of the vertical plane of the pivot, the spring will raise the post and the arm will be brought into position to operate the stop motion.

The groove insures a certain contact between the retaining pin and the arm until such time as the detector finger is positively operated to move the pin laterally from the groove. While the force necessary to do this is slight, an appreciable force is required and this is derived from the pressure of the finger against the knot or lump.

A KNITTING MACHINE FOR RIBBED GOODS.

A machine for knitting ribbed goods to be fleeced has recently been patented in this country and is described by the inventor as follows: The object of the machine is to render unnecessary the usual reciprocating

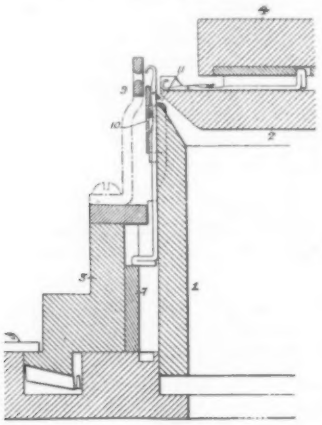


FIG. 1.

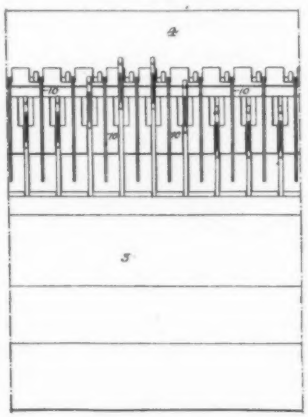
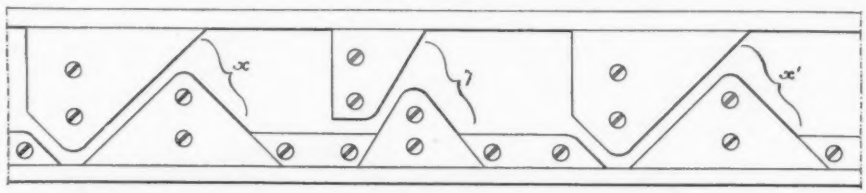


FIG. 2.

hooks or sinkers for the purpose of forming the projecting loops of fleecing yarn, an object which is attained by the use of fixed sinkers in co-operation with needles of the machine so actuated as to receive the fleecing yarn and draw loops over or around the sinkers.

Fig. 1 is a vertical section of the machine; Fig. 2, a front view; Fig. 3, an elevation of the inner face of the cam cylinder; Figs. 4, 5, 6 and 7, views showing stages in the operation of the machine.

FIG. 3.



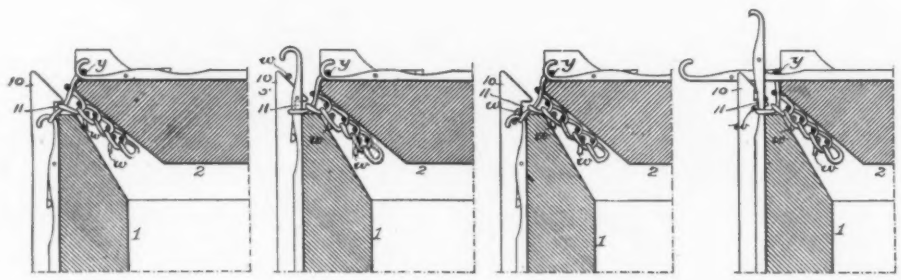


FIG. 4. FIG. 5. FIG. 6. FIG. 7.

The invention is applicable either to machines having rotating needle cylinder and dial and fixed cam carrier, or to machines having fixed needle cylinder and dial and rotating cam carriers, the latter class of machine having been selected for illustration, 1 representing the fixed needle cylinder of the machine; 2, the fixed needle dial; 3, the rotating cam cylinder; and 4, the rotating dial cam plate; all of these parts being constructed and operated in the ordinary manner, except that the cam cylinder, 3, has in addition to the ordinary cams, x and x', Fig. 3, for operating the needles to receive and draw loops of the knitting yarn from the yarn guides, another set of cams, 7, Figs. 1 and 3, for partially projecting the needles so that they may receive fleecing yarn from a guide, 9, mounted upon the rotating cam cylinder, 3, of the machine as shown in Fig. 1. The partial projection of the needles is not sufficient to clear the stitches upon them, so that the needles, on their descent after having received the fleecing yarn, will simply draw loops of yarn which will be cast off upon the next operation of the needles necessary to form stitches of the knitting yarn in the production of the fabric.

The length of the loops of fleecing yarn thus drawn by the knitting needles will be dependent upon the relation of the hooks of the retracted needles to the sinkers interposed between the needle grooves; in order to insure the desired extent of projection of the loop of fleecing yarn at each sinker wale of the fabric, at which it is desired to thus project the same, the needle cylinder, 1, is provided with sinker bits, 10, secured in place by being let into grooves in the cylinder as shown in Figs. 1 and 2. The tops of these bits are beveled on the inner side as shown in Fig. 1 so as to throw the loop of fleecing yarn inwardly as it is drawn down over the bits by the descending needles. The sinker bits extend inwardly beyond the needle grooves to the extent desired for the length of loop to be formed. The sinker bits are by preference notched, as shown at 11, in Fig. 1, for the purpose of engaging with the fleecing yarn and retaining the same

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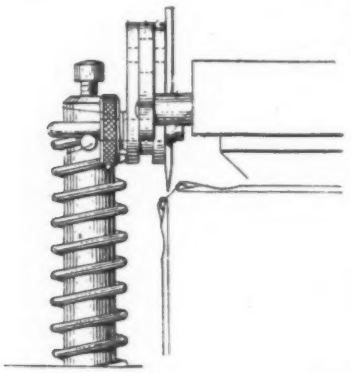

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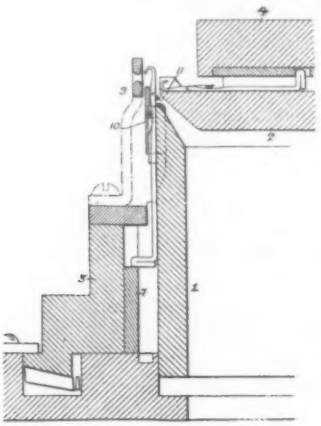
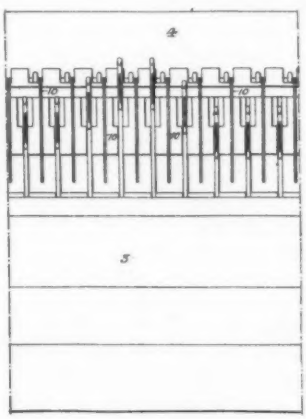


FIG. 1.



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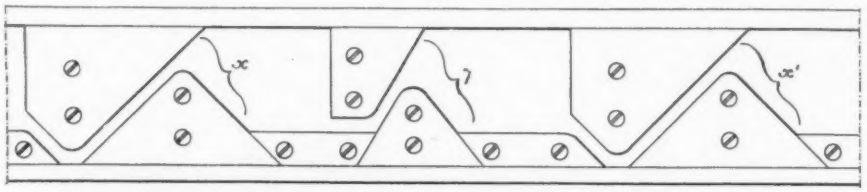

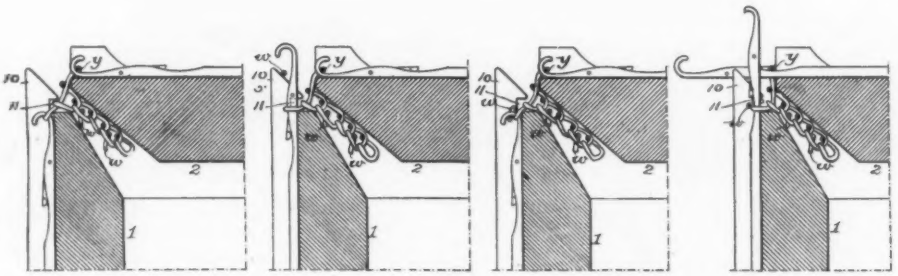

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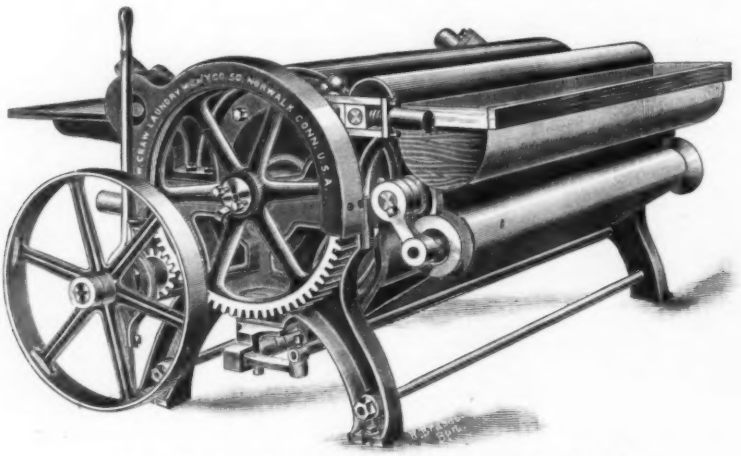
when the cylinder needles rise to receive fresh knitting yarn, thus maintaining the projecting loops on that side of the ribbed knitted web upon which it is desired that the loop shall be formed.

KNIT GOODS FINISHING MACHINE.

The use of the laundry mangle for finishing knit goods is not altogether new. A number of underwear mills have adopted this system with successful results. Under-garments that are sent to a laundry are almost always finished on a similar machine and the apron against the cylinder by means of the auxiliary rolls is sufficient to produce a fine finish without injury to goods of the most delicate fabric. Garments with buttons or buckles can be ironed, finished and dried on it in the most satisfactory manner with perfect safety to the goods and to the machine, and without breaking the buttons.

The following letter from the Dunham Hosiery Company, Naugatuck, Conn., large manufacturers of underwear, ribbed, fashioned and flat, wool, worsted, silk and merino, is evidence of the satisfaction which this machine has given:



THE CRAW MANGLE FOR FINISHING AND IRONING KNIT GOODS.

Consolidated H. S. & L. M. Co. at South Norwalk, Conn., has specially adapted the craw mangle for mill use and claims that it will effect a very large saving in the finishing department of underwear mills. The new adjustments recently added, including the soft wool covered auxiliary rolls, impart a fine finish to the goods. The new apron control automatically guides the apron to run perfectly true from the time it is put on until it is worn out, therefore requiring no care on the part of the operator or skilled labor. The apron passes over the three wool covered auxiliary rolls and encircles about two-thirds of the cylinder, giving a heated area about three times greater than other mangles of the same size, and consequently an enlarged capacity. The pressure of the

"Naugatuck, Conn., May 19, 1908.

"The Consolidated H. S. & L. M. Co., South Norwalk, Conn.

"Gentlemen: We have used the Craw laundry machine for ironing our knit underwear for the last two seasons with much satisfaction, and would most cheerfully recommend it for anyone who has this work to do. The machine is well built and readily operated.

"Very truly yours,

"D. P. Mills,

"Agent."

It is made in a variety of sizes for different requirements. Numerous references can be made to other mills who are using this type of machine on both heavy weight, medium and very light weight goods.

A Knit Goods Trade-Mark Case.

At a recent hearing on the motion for preliminary injunction brought by the Chalmers Knitting Company against the Columbia Mesh Knitting Company the judge stated that he did not think the words "Porous Underwear" printed in red Roman letters upon undergarments are a violation of the technical trade mark "Porosknit" written in script and printed in black, which is the trade-mark of the Chalmers Company. The judge also brings out the point which is not always appreciated by applicants for trade-marks, that a descriptive word cannot be used for a trade-mark, stating:

"It follows, therefore, that if the trade-mark 'Porosknit' be regarded as a merely arbitrary or invented word which has 'either no meaning at all or no meaning in relation to the goods which it denotes' (Cellular Clothing Co. vs. Maxton, supra. 333), there is no infringement; while if it be considered as denoting the style, kind or quality of article manufactured, the registered trade-mark is invalid.

"The motion for preliminary injunction is denied, but unless complainant feels that all three questions argued at bar; viz: jurisdiction, validity and infringement, are shown in this record as fully as he will be able to show them, I shall not dismiss the bill. In other words, if the complainant elects to take a speedy review of this decision on the record as it stands, he may do so, but defendant's motion to dismiss the bill is denied."

Standard vs. Hemphill Infringement Suit.

The Standard Machine Co. of Philadelphia has brought suit against Rambo & Regar, Inc., of Norristown, Pa., claiming infringement of its patents by the use of the Banner Automatic Knitting Machine, known as "Hemphill,s Latest," which is built by the Hemphill Manufacturing Co., Pawtucket, R. I. It is understood that this is a test case to settle the claims of infringement. The Hemphill Manufacturing Co. will defend the suit and has notified the trade that they will defend their customers in cases which may arise on account of the use of the Banner Machine. The final result is awaited by the trade at large with much interest.

New Philadelphia Office.

The Grosser Knitting Machine Co., Max Nyedegger, whose main office is at 260 West Broadway, New York, has opened an office in Philadelphia at Room 435, Bourse Bldg. The Philadelphia business of this concern has increased to such an extent that this step is necessary to take care of the Philadelphia trade.

Pennsylvania, Philadelphia. The Yorkshire Worsted Mills Co. operating a plant at Coral and Adam Sts., and also at Lenni Mills, Pa., is reported to be negotiating for a new mill. Men's wear worsteds and piece dyes are manufactured on a total, in the two plants, of 290 looms.

KNITTING MILL NEWS.

New Mills.

Alabama, Alexander City. A company is being formed by A. R. Robinson and associates to build a hosiery mill. No decision has been made regarding the building and machinery and they invite prices and other information relative to hosiery manufacturing.

*Georgia, Brunswick. The Brunswick Knitting & Mfg. Co. has been organized with capital stock of $20,000. A knitting plant will be started in this city. A building has already been secured and some of the machinery contracts have been given out. J. E. Moody will be manager of the new mill.

*Illinois, Decatur. The Hinman Knitting Co. has decided to build a mill 40 by 77 ft. and two stories high, with basement. No contracts have been awarded for either building material or machinery equipment. The Hinman Co. was incorporated in February with a capital stock of $20,000. Hosiery will be manufactured.

Illinois, Joliet. Wm. Buchanan & Company have started a factory for knitting slippers partly made by hand and partly produced on Grosser machines. They are buying high grade Saxony and worsted yarns. Business is reported excellent and they expect to enlarge their plant to a capacity of 500 dozen a week. They make their own soles and linings for slippers.

*Massachusetts, Great Barrington. The Reliable Knitting Co. is installing a rotary washer and dyeing machinery and will soon begin finishing their product.

*Massachusetts, Ipswich. The Brown Stocking Co. is constantly receiving machinery and setting it up and increasing the capacity of production from week to week. It is reported that they have orders enough on hand to keep the plant going for six months. The product is sold through the Contoocook Mills, selling agents, at 104 Chauncy St., Boston.

Massachusetts, Worcester. N. C. Nielson, 2 Du Pont St., has put in 4 knitting machines which he is operating on sweater coats, selling direct.

New Jersey, Paterson. J. J. Scharer, 625 River St., has recently put in 4 flat knitting machines and 3 sewing machines for the manufacture of sweater coats, etc., which he is selling direct. The plant is run under the management of Peter Tissing. They buy woolen and worsted yarns.

New York, Brooklyn. A new knit goods manufacturing company has been chartered and will be known as the Eclipse Knitting Mills of Brooklyn. The capital stock is $10,000. Nathan Carton of Tarrytown. Marcus Kahn of Brooklyn and Israel Gordon of New York City are the incorporators.

*New York, Fowlerville. The new Fowlerville Knitting Mill Co. has capital stock of $10,000 and will operate 9 to 12 knitting machines and 5 sewing machines on sweaters, toques, mittens and novelties. Construction work will start on the plant June 1 and it is expected that manufacturing will begin July 1. In the meantime, contracts

for machinery and supplies will be given out so that on completion of the building, all will be in readiness for the production of goods. John Torrey is president, S. D. Ensign is treasurer. Both steam and water power will be used. They are interested in receiving information on air moistening systems and a 35 to 40 horse-power boiler.

*New York, Jamestown. F. R. Campbell, who is at the head of the project for the organization of the new knitting mill, has removed from the Ellicott Bldg. to rooms 43 and 45 Wellman Bldg. Mr. Campbell advises that no machinery has been purchased as yet, but they are interested in receiving information and prices. A company will shortly be organized.

*New York, Oswego. The Glove Textile Co. has started a plant of 4 knitting machines on mercerized linings at 146 West First St. Plans are under consideration for improving the plant and they are interested in information on cone winders measuring and folding machines, finishing machinery, cloth boards and a small size boiler. The Glove Textile Co. has capital stock of $2,000. F. C. Osterhout is president, O. S. Osterhout, treasurer and A. S. Jessup, superintendent. F. C. Osterhout is buyer. Product is sold through Bellis & Klein, Gloversville, N. Y. The plant is run by electric power. Yarns are bought.

New York, Rochester. Jacob Ederly, formerly with Max Lowenthal & Bro., has started up a small plant for the manufacture of sweater coats and fancy knit goods. He buys woolen and worsted yarns and sells the manufactured product direct.

*North Carolina, Cotton. The knitting plant of West & Bullard will be in operation about June 15. Messrs. West and Bullard will operate and oversee the plant themselves. Equipment will be 10 knitting machines, one ribber, 2 loopers and one welter. Manufacturing will start on both hose and half hose, using No. 16 yarn. Product will be sold in the grey at present. No arrangements have been made as yet with agents to handle their goods.

*Pennsylvania, Ariel. The Ariel Knitting Mill Co. will start manufacturing a line of men's knit underwear about June 1. It will be remembered that in April, J. W. Sandercock and associates were reported as purchasing the underwear machinery of the United States Knitting Co., of Hawley. This equipment has been installed in the new building erected for the purpose, together with 12 sewing machines. The Ariel Knitting Mill Co. has capital stock of $15,000. L. W. Ross, of Scranton, Pa., is pres., C. E. Chittenden, Scranton, treas., S. B. Murray, secy., and J. W. Sandercock, supt. Steam power will be used. A selling agent to handle the goods has not been decided upon.

Pennsylvania, Hawley. The L. & P. Knitting Co. have recently been started up for the manufacture of sweaters, etc. The owners of the plant were formerly in the employ of the United States Knitting Mills Co., from whom they purchased machines and installed them in the same building on the first floor. They sell direct.

Pennsylvania, Philadelphia. The knitting plant recently started by Frank Boulter at 2731-5 North 6th St., is run under the name of the Franklin Hosiery Co. The equipment of the plant will be 45 knitters, 15 of which are now in operation on ladies' fine gauge hosiery. They are buying 18s to 60s cotton yarn on cones. The product is sold direct.

Pennsylvania, Philadelphia. A small plant has been started up at 40 E. Silver St., by McCaffrey & Totten, in which they are manufacturing fine seamless hosiery which they are selling direct.

*Pennsylvania, Pottsville. H. J. Miller of the Superior Knitting Co. of Port Carbon is at the head of a syndicate which has purchased a tract of land along the river front south of Pottsville upon which a knitting factory will be erected. It is stated that a $100,000 company will be formed. It has been previously reported that Mr. Miller would erect an underwear factory at Pottsville.

Pennsylvania, Reading. Chas. S. Summers has fitted up quarters at 1142 Mulberry St., in which he has installed 10 knitting machines, recently purchased from the Boss Knitting Machine Works, which he is operating on 144-needle half hose, selling the production direct.

Pennsylvania, York Haven. The New Cumberland Knitting Mill, operated here as a branch of the New Cumberland Knitting Co., New Cumberland, Pa., it is reported has been sold by Joseph Baughman, one of its proprietors, to the new Penn Hosiery Co., recently formed by Jacob Bruan, Ira and Milton Warner and James Rife of this city, who will put the plant in operation at once. The mill contains 50 knitters, 12 ribbers and 12 loopers, which were operated on men's seamless half hose.

Enlargements and Improvements.

*Connecticut, Addison. The Glastonbury Knitting Co. is preparing plans for the new dye house and other enlargements which will be made during the summer.

*Georgia, Atlanta. All arrangements have been made by the Atlanta Hosiery Mills for the rebuilding of its plant which was destroyed by fire some time ago. Contract has been awarded for the erection of two brick buildings, one to be equipped for knitting hosiery and the other for dyeing and finishing. Contract has been awarded for 110 knitting machines. S. A. Magill is president and buyer.

*Georgia, Savannah. The Savannah Cotton Mills has awarded contract for the machinery to be installed in the new 40 by 150 feet addition of which particulars have been given previously.

*Illinois, Milford. The Schwartz Knitting Co. have removed their plant here from Chicago and will shortly start operations. It is stated that the town gave them a bonus and guarantees financial backing. The Schwartz Knitting Co. was declared bankrupt last September and the plant sold to satisfy creditors. A reorganization has since taken place and part of the machinery was operated on 324 W. Washington Blvd.

*Indiana, Fort Wayne. The stockholders of the Wayne Knitting Mills have voted to increase the preferred stock to the extent of $175,000, and the common stock to the amount of $125,000. Although the company has denied the report, it is again stated by reliable parties that new building will be erected in the eastern part of the city at a cost of from $25,000 to $30,000.

Maryland, Hagerstown. As previously reported, the Antietam Hosiery Mills is about ready to equip a new dye plant. The parties interested in the Hagerstown Silk Mills are also interested in the Antietam Hosiery Mills.

Massachusetts, Lowell. In addition to the erection of a new mill, previously detailed, the Lawrence Mfg Co. has secured permit for the erection of a 2-story building, 159 by 44 ft., which will be used for making packing boxes and as an auxiliary power plant. The estimated cost is $7,500.

*Massachusetts, Waltham. The American Knitting Co. is now located in its new factory building recently completed. The American Knitting Co. was incorporated in November with capital stock of $10,000. This step was taken to provide for the enlargement of the business in connection with the equipment of the new mill. The new structure is 3 stories high, 70 by 40 ft. Alfred Tomlin is president and general manager.

*Massachusetts, Ware. The spring needle underwear machinery that is being built for the Otis Company by the Crane Mfg. Co. of Lakeport, N. H., is simply to take the place of a number of old machines which will be broken up. No increase in the total number of machines is contemplated.

*Michigan, Port Huron. The addition to the plant of John L. Fead & Son has been completed and machinery in the old plant and in the new addition is being operated day and night to take care of the orders on hand.

New York, Albany. A new cement flume is being built for the Fuld & Hatch Knitting Co. The flume runs from the canal of the Cohoes company to the Fuld & Hatch plant.

*New York, Cohoes. It is reported that construction work will shortly be started on the 4-story, 96 by 40 foot building to be erected for the Hope Knitting Co. The new building will be located east of the mill and will extend to Saratoga St. The estimated cost is $20,000.

New York, Frankfort. The capital stock of the Duofold Health Underwear Co. has been increased from $100,000 to $175,000. It is expected that the capacity of the plant will be largely increased. Men's, women's and children's underwear is manufactured on an equipment which consists at present of 150 knitting and 225 sewing machines. They buy 5s to 100s cotton and 20s to 60s worsted yarns.

New York, Hudson. A new boiler is to be installed in the plant of the Swansdown Knitting Co. The mill is shut down at present while the change is being made.

New York, New York. The Westside Knitting Mill, whose plant at 422 W. 14th St. was destroyed by fire in February, is equipping a new plant at 585-589 Hudson St., corner Bank, and expects to resume manufacturing June 1.

*New York, Waterville. The Oneida Hosiery Co. is preparing plans and specifications for an enlargement of their manufacturing operations in this city which will take in the property recently purchased by them.

*North Carolina Carthage. The Bismark Hosiery Mills, organized in October, commenced manufacturing on April 15. Seamless hosiery is made on 20 knitting machines, 4 loopers and 5 ribbers, using 12s to 40s yarn. The Bismark Mills have capital stock of $5,000. J. C. Hewson is president, J. F. McArthur is treasurer and buyer. They will shortly install a rewinding machine, order for which has not yet been placed.

Pennsylvania, Bernville. The Gruber Knitting Co. of Reading has removed to this place and will be run hereafter under the title of D. F. Gruber. The address is R. F. D. No. 2. The Reading Looping Co., which was in the same building as the Gruber Knitting Co., has suspended.

Pennsylvania, Philadelphia. The Roxboro Hosiery Mills are removing from their present address at 2731 North 6th St., to new quarters in the Scott Mill, 2011 East Arizona St., where they have leased the two upper floors of the building. The plant, which is owned by Messrs. Maddock & Wolstencroft, whose offices are at 527-9 Bourse Building, manufacture seamless cotton half hose, their present equipment consisting of 50 knitters, 10 ribbers, 12 embroidery machines and 7 loopers, will be greatly enlarged when they are finally settled in their new quarters.

Pennsylvania, Philadelphia. The Dundeis Hosiery Mills, manufacturers of women's seamless cotton hosiery on 40 knitters at 3719 Filbert St. have recently installed 10 new knitters. The product of the plant is sold direct.

Pennsylvania, Philadelphia. Clark & Baker, Pastorius and Osceola Sts., Germantown, manufacturers of women's and misses' seamless and cut cotton and lisle hosiery on 140 knitters have recently rented space at 1122 Wakefield St., in which they have installed 50 additional knitters. This plant is run as an annex to the main mill on Pastorius St.

Pennsylvania, Philadelphia. A new addition is being built to the plant of A. Boyle & Bro., and upon its completion, the finishing department will be moved from its present quarters to the new space. It is expected that the work will be completed about July 1. The company manufactures women's and children's ribbed cotton hosiery on 200 spring and latch needle knitting machines, selling the product direct. The address is 2555 Fairhill St. At present, the finishing department is at Palethorp & Oxford Sts. The firm buys.

Pennsylvania, Philadelphia. An application has been made for a charter for the Lehigh Hosiery Co., with Oscar Schwind, Richard Schletter and Franz Ehrlich, Jr., as the incorporators. The plant of the company is located in the Lomax Mills at Jasper and Orleans Sts., where they are manufacturing fine silk full fashioned hosiery on 3 machines, selling the product direct.

New Machinery and Processes.

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to textile manufacturers. It is not a list of patents, but of improvements coming on the market. The idea being to present to our readers a systematic monthly record of new machinery etc., of interest to textile mill men.

We invite machine builders and others to send us such information for this department.

Commercial Cassettes. Commercial & Industrial Co., 85 Gainsboro St., Boston, Mass., are introducing the Carpenter commercial cassettes, which are used for displaying samples of commercial products. An illustrated description will be found in another part of this issue.

Apollo Oil. The Vera Chemical Co., Stoneham, Mass., are introducing a product called Apollo oil which has been used for a long time in Germany for oiling wool. It is said to possess important advantages over ordinary wool oils.

Thread Guide. I. E. Palmer, Middletown, Conn., is introducing a thread guide for spinning frames which is described in another part of this issue.

Finishing Machine. Joseph Strang, Ramsbottom, England. A cloth expander by which the goods are straightened in the finishing process, bringing the filling at right angles with the warp.

Attachment for Mules. Otto Dinker, Crimmitschau, Germany. A method of driving the carriages of self-acting mules. It is claimed that much better control is obtained than has hitherto been possible.

Warp Stop Motion. C. G. Boden & Son, Grossroehrsdorf, Saxony. A warp stop motion operated by electricity. Especially adapted for narrow fabric looms.

Loom Stop Motion. Heinrich Pickhardt, Bocholt, Germany. An improved stop motion for looms which, it is claimed, combines a simplicity of construction with a reliability of operation in the case of the breaking of the filling.

Automatic Loom. Julius Hajek, Tiefenbach, Bohemia. A loom attachment by which the shuttles are automatically changed.

Single Thread Strength Tester. Daniel Foxwell & Son, Manchester, England. An automatic machine for testing the strength of yarn by single threads.

Reeding Machine. Daniel Foxwell & Son, Manchester, England. A machine introduced for the purpose of reeding warps tied in by the knot tying machine.

Shedding Device for Looms. Teddy Isherwood, Ramsbottom, England. A new device for operating loom harness during weaving. It is claimed that the action is positive and the strain on the warp threads considerably reduced and that the jerky motion incident to tappet shedding is avoided.

Engraving Machine. Lockett, Crossland & Co., Strangeways, Manchester, England. An improved machine for engraving printing rolls for textile print works.

Eyelet Machine. The Reece Button-Hole Machine Co., of Boston and Philadelphia, are introducing a new automatic machine for cutting and working eyelets for underwear and other garments.

Loom Friction. Dr. Ing. Desiderius Schatz, Zittau, Saxony. An improved let-off motion for looms which it is stated has worked very satisfactorily in Saxon mills.

Cloth Steaming Machine. Tomlinson, Ltd., Rochdale, England. An improved machine for steam finishing woolen goods. It has two perforated cylinders on one of which the cloth may be steamed while a steamed piece is being drawn from the other. It is equipped with a steam pipe, water and air pumps, enabling the treatment to be varied to suit the finish desired.

THE HANDICAP OF HARD WATER.

HOW SERIOUS IT IS, YET HOW EASILY OVERCOME.

One of the primary requisites in a successful and economical textile mill is a bountiful supply of good water, as upon this depend largely the quality and cost of the finished product. Water that contains calcium and magnesium salts, compounds of iron, or suspended matter, is unfit for use in the manufacturing processes. Only by suitable treatment, to soften and purify it, can such a water be made useful.

When soap is one of the scouring agents employed in wool scouring, the use of water which contains the metallic salts mentioned causes a sticky, insoluble formation of calcium and magnesium soaps, not only useless as detergents, but which attach themselves to the wool in such a tenacious manner that they cannot be removed by simply washing with water. As a result there is not only a heavy waste of soap in proportion to the amount of salts present, but also a likelihood of trouble in the subsequent dyeing operations.

In the case of some dyestuffs, the lime soap acts as a resist, preventing the uniform fixture of the dye, thus producing light colored spots or streaks. With other dyestuffs the lime soap acts as a mordant, the result being darker colored irregularities. With iron compounds the defects are much more pronounced, as iron soap possesses a brown color, and iron mordant gives dark, dull shades with most coloring matters.

WASTE OF SOAP.

It should be borne in mind that the amount of soap destroyed is equivalent to the total amount of metallic salt contained in the water, and not merely the amount corresponding to the carbonates. The quantities of soap, alkalies and acids used annually to prepare hard water for textile operations reach vast proportions, entailing enormous costs which are positively needless wastes, since pure, soft, clear, uniform water is nowadays within the reach of nearly every mill—produced by artificial means, and at a yearly cost many thousands of dollars cheaper than when soap is the softening agent employed.

The use of hard water in washing off piece goods after scouring, mordanting or dyeing frequently results in defects known as "white lists" or "dark lists." These imperfections develop through the capillary flow of the water into the selvages, as the latter dry most rapidly when the cloth is rolled up in a wet condition. As the water evaporates, its solids are deposited, and this deposit, as stated, acts as a mordant or a resist. While it is of the greatest importance that the wool fiber be not injured during the scouring process, yet it is absolutely essential that the scouring should be thorough, as any grease or dirt left in the wool is likely to cause irregularity of shade in dyeing, and other defects in the finished material.

TROUBLES IN BLEACHING AND DYEING.

Unless the scouring process has been thorough, and the wool is free from foreign substances, there is likely to be trouble in bleaching, as it is necessary that the bleaching solution should reach every portion of every fiber, which is impossible if the fatty matter is not removed or if there has become attached to the wool any substance employed as a scouring agent. Such substances are apt to give rise to yellow oxidation products, which destroy the purity of the white. Sulphuric acid is frequently used when fitting water for mordanting, in order to neutralize the action of the metallic salts. This, however, is not so satisfactory as the use of water initially soft, and is more expensive than treatment by a reliable water softener.

The effect of the different water impurities during the dyeing operations varies greatly, according to the coloring matter employed. With some dyes the character of the water used does not have much effect, while in other cases it is quite impossible to produce satisfactory results with a hard water. Most of the basic coal tar colors are readily precipitated by metallic salts. The use of hard water in the application of this class of dye is, therefore, very wasteful, since the precipitated color is not only useless, but, adhering to the surface of the wool, causes the effect of "rubbing off."

EUREKA AUTOMATIC WATER SOFTENING AND PURIFYING SYSTEM AT MILLS OF BURSON KNITTING CO., ROCKFORD, ILL. CAPACITY, 10,000 GALLONS PER HOUR.

ADVANTAGES OF SOFT WATER.

It will be seen that a water containing any considerable quantity of impurities is entirely unfit for use in the dye house, as well as in the operations of fitting the wool to receive the dye. Very large amounts of coloring matter, soap, and other materials are wasted in a textile mill where hard water is the only available supply; and if to these wastes are added the cost and annoyance entailed by bad work, due to the same cause, it will be seen that a mill using hard water is very seriously handicapped thereby. The general level of the work is lowered to some extent, and falls short of the standard which would be attained if a more suitable water supply were at hand. A manufacturer who has soft water for his processes holds an immense advantage over a competitor using a hard water, as he is able not only to produce a superior quality of product, but to do so at a lower cost.

In a textile mill a soft water supply is not only essential for producing high grade goods on the most economic basis, but is of value in the power plant, to prevent the formation of scale in the boilers and appurtenances, thereby greatly reducing the expenses for cleaning and repairs, eliminating the costs for boiler compounds and mechanical cleaners, and cutting down the fuel consumption. The savings effected in these expenses will be just in proportion to the amount of scale which is kept out of the boilers, and which would otherwise accumulate.

The cost of water treatment for perfect softness and purity is insignificant as compared with the savings obtained. A fairly average cost for the reagents used is about 2 cents per 1,000 gallons of water.

METHODS OF WATER TREATMENT.

Before installing a water softening plant, decisions must be made on various essential points. First there is the type of apparatus and method of treatment to be considered. The intermittent or "settling tank" system, while having an advantage over the continuous system in the matter of first cost, is handicapped by the important fact that the large settling tanks occupy extensive ground areas, which in most instances could be used to good advantage for other purposes. Furthermore, for systems of the sizes usually installed by textile mills, it is necessary to keep at least one man in constant attendance, to fill, charge, clean and refill the tanks. This labor cost for a period of months or years must be added to the first cost of the settling tank plant in order to obtain a fair comparison between the two types of softeners, since the most efficient continuous systems require no extra labor, the engineer or some other intelligent employe giving the few minutes' daily attention required, along with his regular duties.

Aside from this it is necessary in an intermittent equipment to have a pumping capacity sufficiently large to fill a tank quickly when emptied, while with the continuous system no such provision is needed as the apparatus can be supplied with water in a regular and uniform volume, and can save an automatically controlled storage tank to care for all fluctuations and sudden demands. In the intermittent system, again, it is necessary to install a motor or provide other motive power for actuating the stirring apparatus in the tanks. In the most efficient continuous machines the weight of the incoming raw water supplies all the power required to move the stirring device.

Another most important feature in any case is that the purifying apparatus should have perfect and absolute control over the supply of reagents used in treating the water, for if they are not furnished in sufficient quantity, or if the strength varies, there must be an under-treatment and non-uniform results, causing much trouble to the dyer. On the other hand, if an excess of reagents is fed, these reagents themselves constitute impurities.

THE EUREKA AUTOMATIC SYSTEM.

One of the modern and efficient continuous systems is that which forms the basis of design for the "Eureka" Automatic apparatus, made by the Dodge Manufacturing Co. In this system the reagent feed is under absolutely automatic control, and the operator can adjust the reagent flow at any moment, if he so desires, in order to suit any sudden variation in the initial supply, as may occur

occasionally in a river or other source. The result is that the treated water is always uniform and may be used right along without fear of variation in quality or action.

By using a saturated lime water, the impurities common to all limes are precipitated to the bottom of the lime tank, whence they are blown to the sewer by simply opening a valve. By this method none of the lime impurities can come in contact with the water to be treated, and consequently there are no lime particles to pass over into the scouring vats to form troublesome lime soap, or into the boilers to cause pitting. The high alkalinity of the treated water produced by many continuous systems is practically eliminated in the "Eureka" System by using the saturated lime water instead of the milk of lime. The hardness is low and results uniform. Most complete and instructive of current literature on this subject is the Eureka Book "101-A" which will be sent to interested inquirers applying to the Dodge Manufacturing Co., Mishawaka, Ind.

POSSIBLE ECONOMIES IN LUBRICATING OILS.

A recent investigation of the quantity, quality and cost of oils used by various mills under the management of a single organization revealed conditions so varied as to point the moral of the value of expert advice in their purchase. In this case the chemist, Arthur D. Little, of Boston, by whose courtesy the results and conclusions are presented, found a range in the cost of machine, engine and special oils (exclusive of cylinder oils) from 14 to 48 cents per gallon, as appears from the following table:

Name	Price	Sp. Gr.	Flash	Fire	Cold
Machine	14c	0.872	399	464	36
Machine "A"	16c	0.872	388	462	36
Machine	14c	0.926	329	361	28
Machine	15c	0.932	352	385	17
Engine	23c	0.914	410	470	8
Engine "B"	25c	0.861	414	467	8
Special Engine	48c	0.907	405	446	10
Signal Oil	45c	0.845	265	283	39
Crank Case	18c	0.877	514	590	29

The real value of the oil is shown by the constants revealed by the investigation. With qualities almost identical there is material variation in the price, as for instance between the first and second samples, and between the different engine oils. Mr. Little's opinion, based on extended experience in similar cases, was that 12 cents per gallon would be a fair price for these oils taken as a whole. At this figure his clients would be able to save nearly $1,200 per year by the use of the cheaper oil without detrimental results.

BELTS AND BELT TRANSMISSION PROBLEMS.

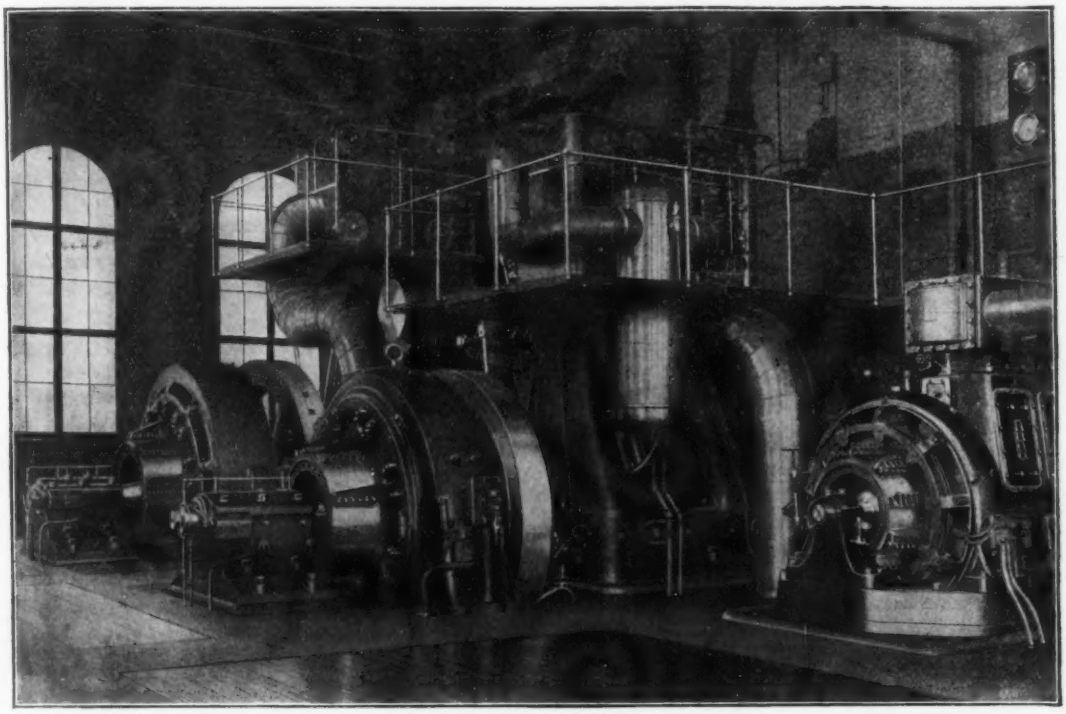
As set forth by Chas. F. Chase at the annual convention of the National Association of Cotton Manufacturers, comparatively little information is available on this subject. The results of experiments as set down by different writers vary to such a degree that a comparison leaves the searcher after information with a strong impression that more accurate data is needed. The calculations of millwrights and master mechanics as to the speed and width of belts required to transmit a given amount of power vary as widely as the conclusions arrived at by the writers. The tension of belts brings out another difference of opinion. As Mr. Chase points out, tight belts cause friction which consumes power in making hot boxes and otherwise wearing out the equipment. Loose belts allow slippage which causes loss in production. Yet there is no degree of tightness or looseness which is recognized as giving highest efficiency. When thousands of belts of all sizes, thousands of feet of shafting, and hundreds of hangers are in daily operation it would pay to go to a great deal of expense in time and effort to find the facts in belt transmission problems. In view of the striving after economy in other mechanical lines, Mr. Chase pertinently asks why economy in transmission has been given so little attention. Undoubtedly more light on the subject is needed and it is hoped that Mr. Chase's effort will awaken an interest in present abuse of belts and transmission equipment in general.

Switzerland, with only 15,469,000 square miles of land and 3,500,000 people, had a foreign trade in 1906 of $855,770,382.

THE FACTORY POWER PLANT.

The power plant of a factory is of greater importance than is generally realized, this being largely due to the fact that the greatest consideration is often given to the methods of manufacture. It is important, however, that the factory be supplied with power and light, and the power should be supplied with economy. Although economy is so important, the saving of a small percentage in the coal bill should not be gained by the sacrifice of capacity for continuous operation. A breakdown in the power plant often causes trouble and loss far in excess of the slight saving that might be effected through the use of a delicate and complicated prime mover. Among the features that the factory power plant should have are the following: the engine or generating set should be especially designed for reliable operation with the least attention; clearances should be reduced to a minimum for economy's sake; and the lubrication should be abundant not only to reduce losses due to friction, but also to render unnecessary the constant take-up of adjustable parts and frequent renewal of wearing surfaces.

The equipment of the power plant of the B. F. Sturtevant Co. called for generating sets having these features. The result was that the B. F. Sturtevant Co. made their own generating sets, and as these have been tried out and found not only economical but reliable in operation, they are now being placed upon the market. Sturtevant generating sets are built in over fifty standard sizes from 3 to 500 K. W., thus standard sets can be supplied for factory power houses of any size. The larger sizes from 150 to 500 K. W. are especially designed for economy. They are of the four-valve type, equipped with gridiron valves, each steam valve having an auxiliary gridiron valve sliding upon its face; thus the valve gear combines the advantages of the four-valve type by reducing

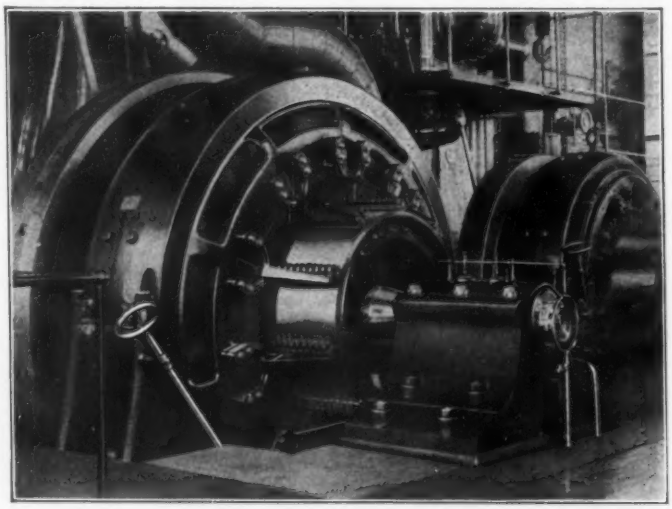


INTERIOR OF POWER HOUSE SHOWING THREE STURTEVANT GENERATING SETS: 400 K. W., 250 K. W. AND 100 K. W.

clearance and having individual adjustments and of the gridiron valve with its numerous ports. The main steam valves and the exhaust valves are actuated by the main eccentric on the crank shaft, while the auxiliary or cut-off valve is controlled by the governor, which is a modification of the well-known Rites' inertia type. This valve gear then permits the cut-off to be varied automatically by the governor without in any way affecting the other events.

The cylinder castings contain cylindrical chambers for the cylindrical valve seats and valves, the chambers being in the cylinder castings and not in the heads. This design makes it possible to remove the cylinder head to inspect or repair the piston without disturbing the adjustments.

The engines are of the vertical cross-compound type with cranks at 90° in order that they may be perfectly balanced, and that the floor space may be small so that the factory power house may be erected at the least cost. The floor space required is very much less than that of a horizontal compound engine of the same horse power. The feature that contributes most to its capacity for continuous operation is the lubricating system. A small direct-acting pump supplies through pipes and passages in the moving parts an abundance of oil to all rotating and sliding surfaces within the enclosing frame. This means that without attention on the part of the operating engineer, the wearing surfaces are supplied with lubricant, the pressure in the system being maintained at about fifteen pounds per square inch. The results of such lubrication are readily appreciated by the engineer, for it relieves him from the constant care of small details and greatly reduces the wear on the moving parts. These engines will run for many months without the adjustable parts being taken up.



400 K. W. 10 POLE GENERATOR.

The generators are of the Sturtevant ten-pole type, and made in the same shop as the engines. In fact, being made for each other, the engine and generator are a most successful combination Like the engines, the generators are designed for a wide range of load, and require practically no attention. They are capable of carrying an overload of 33 1/3 per cent. for two hours without injurious sparking, and an overload of 100 per cent. without destructive sparking or heating. The insulation is carefully selected, and its resistance is tested at a maximum temperature by alternating current of at least 1500 volts at 60 cycles for a period of 60 seconds. The armature is of the iron-clad drum-wound type, the core being built up of

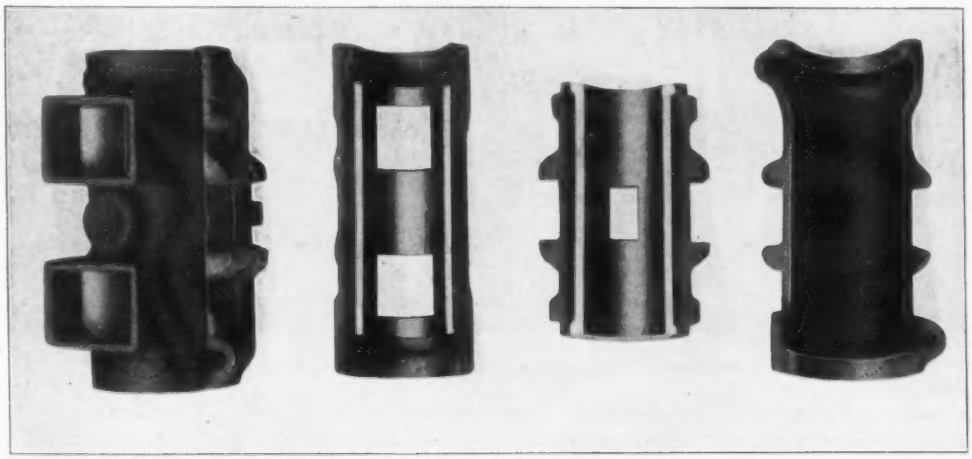
sheet-steel segments. It is multiple-wound and provided with cross-connecting rings so that all brushes of the same polarity are maintained at the same potential, a feature that insures uniform pole strength. While it is easy to true up small commutators, it is quite a different matter when the commutator is for a generator of 400 or 500 K. W. capacity. For this reason the Sturtevant generating sets of this size have commutators made with the greatest care, and so perfectly insulated that the necessity of turning off the commutator is a remote possibility.

The best grade of carbon is used for the brushes which are of such area that the current density will not exceed 30 amperes per square inch. They are held in brush holders of the latest design, and each brush holder is clamped to a composition frame which is insulated to the brush ring itself. Each brush holder can be adjusted separately and removed for cleaning or repairs, or the entire brush ring may be rotated by the hand wheel.

HANGER BOX FOR HOWARD GREASE.

A reliable lubricating device for shafting hanger boxes is very essential; something which can be depended upon for perfect lubrication and do away with the dripping and throwing of oil, so annoying and destructive in nearly all textile mills and factories. To meet this demand and as a result of many tests, Olney & Warrin, manufacturers of transmission machinery, 66-68 Centre St., New York, have brought out the Howard hanger, adjustable pillow block and post hanger with a box specially designed for a perfect grease lubricant. As will be seen, this bearing is made in three parts, the lower section on the right being cast separately, thus being free from sand and grit, which is impossible with a box made in two pieces only. The next is the lower shell with its heavy lining of babbitt. This fits into the lower section and has a recess for holding a piece of felt which assists in the distribution of the grease and acts as a wiper, being directly in the center of the section. The top half with grease pockets is shown beside this, as well as the whole bearing at the left.

This is designed to be used with Howard grease, works well under 225° of heat, and retains its natural condition in extreme cold. The grease is packed in the two pockets with a small quantity of woolen yarn on the lower side of the shaft, which prevents the grease from being drawn under and insures perfect lubrication. The manufacturers state that one application of Howard grease packed in the boxes will last from 18 months to two years without any attention.

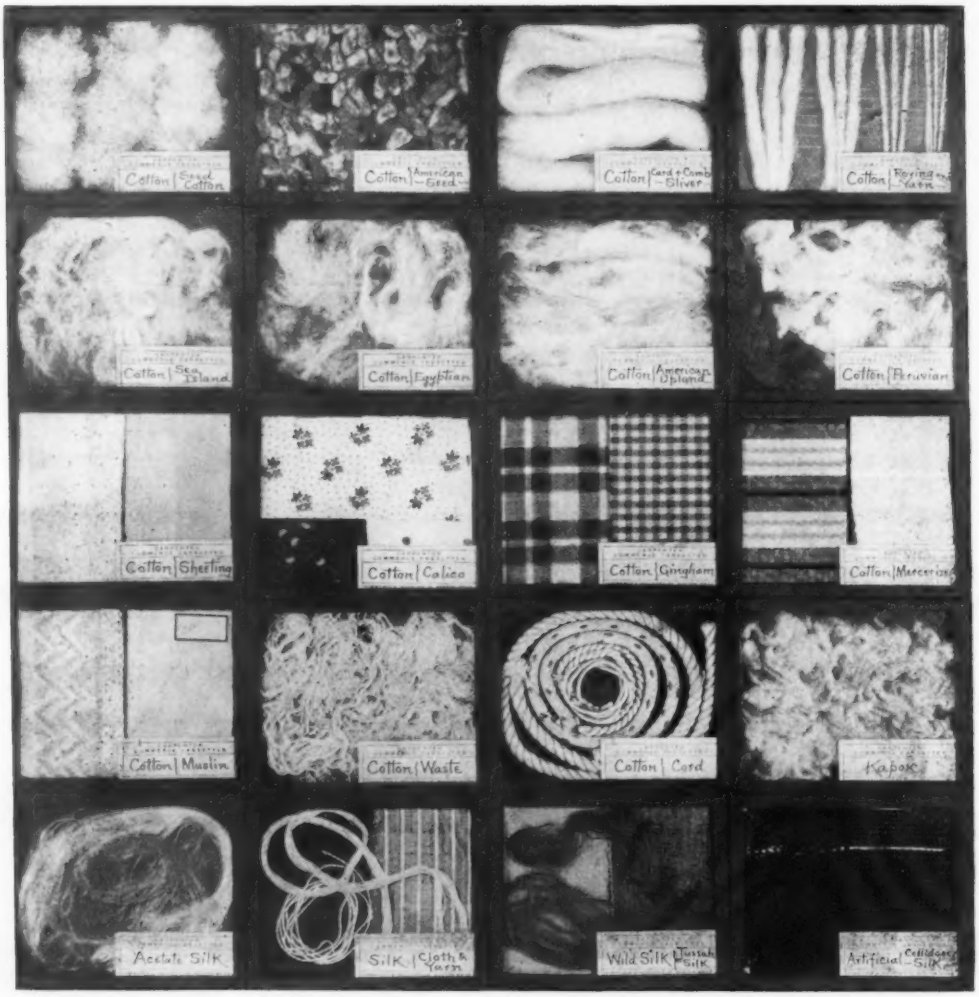


HANGER BOX FOR HOWARD GREASE.

Their booklets, Nos. 11 and 12, are sent on request to owners, managers and engineers who may be interested.

COMMERCE CASSETTES.

A new method of mounting and preserving specimens of textile and other commercial products which is superior to any that we have yet seen has recently been developed. They are so practical and suited to the purpose of preserving and showing specimens of commercial materials, that a strong demand for them has come from teachers and others, and they are now manufactured and sold by the Commerce & Industry Co., 86



CARPENTER'S COMMERCE CASSETTES FOR SHOWING SAMPLES.

The mounted specimens are called the Carpenter commerce cassettes and were devised about a year ago by Frank O. Carpenter, Master of the Department of Commerce, English High School, Boston, for use in his own classes, in the study of commercial products and commercial geography. Gainsboro St., Room 3, Boston, Mass., from whom circulars and prices can be obtained.

The Textile World Record has just purchased a set of the cassettes, for use in the office, showing the chief textile fibers, the intermediate manufacturing processes, and the finished fabrics. We show herewith a

photograph of a part of our set illustrating cotton processes. The cassettes show the texture of the fibers and fabrics perfectly, and are an attractive feature of an office.

The cassettes are small boxes of varying thickness with glass sides, hermetically sealed, water tight, dust and insect proof, light and strong. They can be made of any size but are usually of lantern slide size, 3 1/4 by 4 inches, for convenience in handling and especially for use in the new reflecting lanterns. They are already used by lecturers on materials to pass about the audience.

The cassettes are used for all kinds of specimens, as grains, fruits, nuts, sugar, cotton and wool, woods, metals, etc., for use in classes of commercial geography, domestic science and manual training and for museum collections. A large order of the cassettes has just been shipped to the Argentine Republic for use in the Museum of Education.

The value of the cassettes in an educational line is such that all schools should have a set of them. They will also be found useful by the manufacturer and to the salesman. The texture of the fibers, etc., can be examined under the magnifying glass as easily as if held in the hand, as the sides of the cassettes are made of a clear plate glass.

Samples, showing delicate shades, and fine weaves, can be kept unharmed, though frequently shown, and will not need to be renewed because of soiling or injury from handling. They are not affected by changes in temperature or moisture. A large number can be packed in a small case like a lantern slide box.

Another point of great importance to the manufacturer and dealer is that their own private specimens and samples can be cassetted at slight cost. It would be a great convenience as well as a good advertisement, for a manufacturer to have at hand in safe, permanent form, a set of cassettes showing his own products.

As advertising samples, to be given away to customers, the cassettes made with a business card or label inside the glass, are evidently of great value, because they will rarely be thrown away, and their novelty and attractiveness will keep them about a customer's desk in sight for a long time. This is the result that all advertisers seek to obtain.

A set of cassettes showing the line of goods made by a firm, presented to a local high or grammar school, would stimulate pride in local industries. So too, a few cassettes, showing the chief products and main processes of a mill, could be given to teachers and others who apply for samples of products, and at a great saving in the time and labor now spent to get out the samples desired. If a firm does not wish to give samples, applicants could be referred to the Commerce & Industry Co., who can supply them with the needed material, in bulk as well as in Cassettes, and at fair prices.

The cassettes can be mounted in frames for wall or window exhibits.

THE PALMER IMPROVED ADJUSTABLE THREAD GUIDE.

At the present time it is very difficult to find a spinner who does not appreciate the necessity of an adjustable thread-guide to secure the best results in spinning. The

FIG. I.

common screw thread-guide, on account of its crude form of attachment, does not admit of a uniformly correct centering of the eye with respect to the spindle, which imperfect adjustment is chiefly responsible for the breaking down of ends and wear of the rings. On the other hand, a perfectly adjusted guide produces a big saving of rings and broken ends, and allows a higher speed of the spinning-frame with consequent increase in production of yarn and decrease of labor.

In full realization of these facts, I. E.

Palmer, of the I. E. Palmer Co., Middletown, Conn., has recently invented and placed on the market an adjustable thread-guide which consists simply of a specially bent guide-wire attached to the ordinary

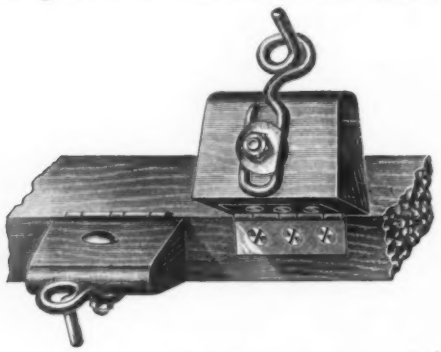


FIG. 2.

wooden clapper of any spinning-frame by two screws, Fig. 1, or bolt and nut, Fig. 2. Between the screws or nut and the wire is a clamp-plate, Figs. 1A and 2A, with deflected lips touching the clapper, which, with the grooved surface of the loops of the wire, produces such an adhesion to the clapper that the adjustment cannot possibly be deranged when the guide is once properly set.

The Palmer types of Pontiac, Nashua, and Commonsense guide-wires are shown at Figs. C3, A3 and OF3 respectively.

Following are some of the claims for this adjustable thread-guide:

No expert machinist is required to attach these guides, as any spare hand can properly drill the holes with the template illustrated in Fig. 3, and can easily attach 800 to 1000 a day with a boy assistant.

These guides can be accurately adjusted and rigidly secured to the ordinary wood

FIG. A1.

FIG. A2.

thread-guide block, old or new, and, when once set, cannot be deranged by the operative.

Especial attention is called to the latitude of adjustment of this guide. Not only is it adjustable in and out to a degree beyond all

possible requirements, but the form of the clamp plate and guide allows of an adjustment to any degree to either side, which latter is not possible with other adjustable guides. All adjustments, either in, out, or sidewise, are made simultaneously and with the utmost ease, accuracy, and permanence.

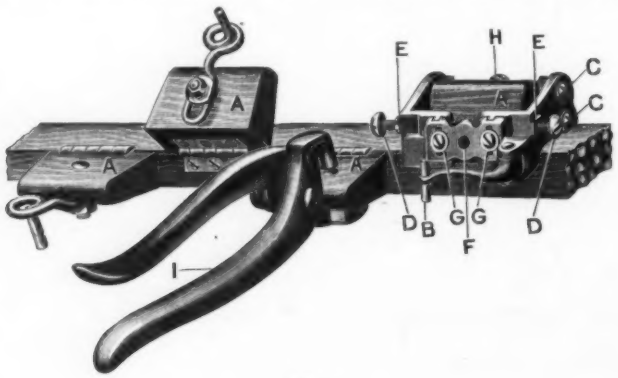


FIG. 3.

In making a change from the old to the new guides it is only necessary to break back the roving of a very few spindles at a time. The frame may be kept running.

Also, there has been designed a set of tools, viz., drilling template, forcing tongs, Fig. 3, and socket wrench (not illustrated),

which render the installation of the guides in quantities extremely easy and rapid. The template on right-hand clapper is adjustable to any shape of clapper by means of the screws, CC and EE, and the plate with drill hole, F, is adjustable by screws, GG, so that the hole for the bolt can be drilled at any point desired. The template, when furnished for use in applying the two-screw guides, is constructed with two holes, F. The tongs,

1, force the bolt into position; the wrench turns up the nuts and also fits the lock-nuts on the template.

Beside its own advantages, the Palmer adjustable thread-guide performs all the functions of any other adjustable thread-

REVOLVING GUIDE FOR TWISTING

guide at about one-third the cost. It has already been furnished in large quantities to the leading mills of this country, both in New England and in the South, and is attracting much attention in Europe.

Mr. Palmer is presenting another novelty,

a revolving guide for wet or dry twisting, which consists of a grooved brass pulley revolving on a pin supported in a holder of brass or other non-rusting material. This guide is attached and adjusted in the same way as the wire guide described above. Tests show that yarn spun with this guide has closer laid fiber and is smoother than yarn twisted in any other way, and it is believed that the driving power these guides save would soon pay for them. Tests for this latter point are to be made soon and very favorable results are expected.

APOLLO OIL FOR WOOL.

A product known as Apollo oil now being introduced in this country by the Vera Chemical Co., Stoneham, Mass., has been in use in German mills for a number of years, it having been manufactured during this time by a firm in Aachen, which is the center of a large woolen manufacturing district. It takes the place of oil for oiling wool in the picking room. It is soluble in cold or warm water. The American manufacturers of this product states that it penetrates the wool fiber and that the moisture imparted by a solution of it to the wool is retained during the carding and spinning processes. Another important claim is that while it facilitates the carding and spinning of the material much better than the oils ordinarily used, it is easily removed from the goods by scouring. It is not inflammable. In fact, like water, it extinguishes a flame to which it may be applied. The difficulties inherent to the use of ordinary oils for oiling wool make it very desirable to have a substitute such as Apollo oil is said to be.

The Vera Chemical Co. are ready to demonstrate the claims made for Apollo oil by a practical test and invite correspondence with woolen manufacturers for this purpose.

John Kay, who invented the fly shuttle, was abused by both the mill owners and the operatives. In 1753 the mob broke into his house at Bury determined to break up his machinery and threatening the inventor himself. Kay was smuggled out of the house in a blanket.

The foundation materials for embroidery at St. Gall are mostly cambric, muslin, and nainsook.—Special Agent W. A. Graham Clark.

Dyeing, Bleaching, Printing, Etc.

SULPHUR DYES ON HALF WOOL.

BY HERBERT ROBSON.
In the Dyer and Calico Printer.

Sulphur or sulphide dyes have only come to their own during the last few years. The cheapness of the early blacks and browns, and their good qualities of fastness appealed to the cotton dyer, but the highly concentrated baths were a drawback, and although dyers have not delicate noses, the perpetual smell of the infernal regions around the dyehouse, although probably healthy, was decidedly unpleasant. Of course this disagreeable feature of the group has not been entirely remedied, but at least has been palliated. The poverty of choice of brand and shade was also a drawback which was long apparent.

Now, however, we have got over these initial difficulties. The progress of the class was perhaps slower than that of any other range of dyestuffs, but the color firms have done wonders in the last few years. They have concentrated the dyestuffs so that the percentages are quite normal, they have rendered them more soluble, and above all, they have filled in the range of color and tone. In many members of the group, the minor difficulties have been remedied. These include bronzy selvages, readiness to attack metals, insufficient exhaustion of the bath, etc.—all faults to the discredit of the early sulphur dyes. The result is, that the cotton dyer has now at his command a fine range of what are practically direct cotton colors, easy to use, economical, and with superior qualities in some important directions to the ordinary substantive colors.

It is natural that the fine qualities of the class should make the colorists anxious to enlarge its scope and to make it suitable for all the uses to which the direct cotton colors are put, as for instance in the dyeing of mixtures and in textile printing. However, all the sulphur dyes require more or less sodium sulphide solution as a solvent, and the presence of this in the bath has an injurious action on wool, so that it seemed as if their application must be limited to vegetable fibers and excluded from half wools and all other mixtures containing animal fiber.

In printing, even in calico printing, there is another difficulty. Of course, in printing as in dyeing, the susceptibility of animal fiber to the action of sodium sulphide, comes into play, but in addition to this there is a deleterious action of the salt on the rollers of the printing machine which put the ordinary printing pastes out of court. We are as yet unable to build machines with rollers of metals which are disinclined to form sulphides. Speaking generally, the affinity of metals for sulphur is about on a par with their affinity for oxygen. When, therefore, a sulphur dye, even when it contains no free sulphur, which is rarely the case, comes into contact with the copper rollers of the printing machine, they are attacked, and deposits of dark brown copper sulphides are formed on them which effectually spoil the results and ruin the machine. All the metals economically available for printing rollers form dark-colored sulphides warranted to mask or spoil any amount of light shades.

It is evident then, as regards printing, that the solution of the difficulty cannot be found in altering the composition of the rollers and must be sought in proper recipes for the printing color. In dyeing mixtures containing animal fiber, substances must be added to the dye bath which will protect the animal part of the fabrics from the sulphide of sodium. In printing these mixtures or woolen muslin, similar substances must be added to the printing color. If they will protect the wool as well as the rollers, so much the better, but it must be remembered that both things have to be considered in printing.

It may be noted that the paper dyer also is anxious to use the sulphur dyes if possible and that in his case there is a fresh complication. The sodium sulphide not only attacks the machine wires but it decomposes the alum added to the pulp for sizing purposes. There is the further difficulty that

waste sodium sulphide in the water running off the wires creates a nuisance by generating sulphuretted hydrogen in the drains. As far as the paper maker is concerned, however, the Bayer Company have overcome his difficulties by introducing gases containing oxygen into the hollander during the dyeing of the pulp. The sodium sulphide by this means is changed into hyposulphite without the dyeing process being injuriously affected.

As regards mixture dyeing and textile printing the solution of the problem has not been quite so simple, but several plans have been proposed and in view of the importance of the subject it will be useful to give a resume of what has been done up to the present.

Various substances are suggested as additions to the dye bath for half-wools in order to protect the animal fiber. These include glucose, lactic acid, formic acid, Katigen Intensifier, bisulphite and sodium phosphate. They all act more effectually in a cool than in a boiling bath, in which no substance as yet known affords complete protection to the wool fiber. The highest temperature permissible is 110° F.

By using either lactic or formic acid it is possible to neutralize the alkalinity of the bath almost completely without precipitating the dye from its solution in the sodium sulphide. The bath having been prepared with the dyestuff dissolved as usual, common salt is added and then the acid. This must be put in slowly and with constant stirring, to check, as far as possible, the evolution of sulphuretted hydrogen into the air of the dyehouse. Ventilation is, of course, essential, but if the bath is cool and the acid is gradually added most of the noxious gas remains in solution. Acid sodium lactate, made by half-neutralizing lactic acid with carbonate of soda, is preferable to lactic acid itself as there is then less fear of precipitation of the dye should a small excess of the acid by chance be added to the dye bath. The goods are now entered and dyed for one hour at a temperature not higher than 80° F. It is well to allow loose wool to lie for a time before rinsing, as the color then darkens and a deeper shade is obtained without using more dye. Yarn and piece goods, however, are rinsed at once and unless they are to be topped are then freed from all remaining traces of alkali with acetic acid. For dyeing the cotton sulphur dyes fast to topping are used. The wool is then dyed with an acid dye.

It is not essential to dye the cotton first. The process may be reversed, dyeing the wool with such acid or mordant dyes as are not destroyed by weak baths of sodium sulphide. The goods are then rinsed and the cotton is dyed with a sulphur dye in a fresh bath. In some cases it is better to dye cotton first, in others the wool. The former process is to dye the cotton first, in others the wool.

The Bayer Company has discovered that Chromium compounds, when fixed on wool, almost completely annul its affinity for sulphur coloring matters, so that chrome mordanted wool worked up in fabrics is left white on dyeing with sulphur coloring matters. The wool may be topped as desired after dyeing. Not only does this treatment facilitate the dyeing of unions, but white cotton cloth with colored wool effect threads can be obtained. The wool is mordanted as usual with potassium bichromate, lactic acid or sulphuric acid. It is then rinsed and dried, and afterwards spun or woven with cotton. To obtain mixed colored effects the wool may be dyed with suitable coloring matters either before or after it is woven up with the cotton.

Another method is that patented by the Society of Chemical Industry in Basle. It appears that in dyeing piece goods with sulphur dyes at low temperatures, silk and wool in the fabric, whether as effect threads only or in larger quantity, can be protected from the sulphur dye by adding to the dye bath either ox blood or Diastafor or a mixture of the two. The method is applicable to all half wool fabrics not containing a very heavy percentage of wool. The resulting dyeings are both faster and fuller in shade than when the blood or the other reducing agent is not added. We are left, however, in the dark as to the question of the color of the blood, which it might be supposed would have very considerable influence on the result, but it is possible that blood albumen would serve the

purpose and at least there is the choice of Diastafor, which seems to be finding a number of valuable uses.

As we have explained, protection is required for the printing rollers as well as for the animal fiber in the fabric. The Society of Chemical Industry in Basle have noted that the action of the sodium sulphide ceases when it is employed in concentrated solution or when solutions of the ordinary strength used for printing purposes are mixed with caustic soda. In examples given the sulphur dyestuff is dissolved in eight times its own weight of sodium sulphide crystals or a strongly alkaline thickening made with British gum, caustic soda and China clay are used.

Care must be taken that the copper rollers are kept fully covered with this color during the printing and to wash them well the moment the printing is done. If these precautions are not observed there will be an action between the copper, the color and atmospheric oxygen, which will destroy all the advantages otherwise resulting. When the rollers are washed they must be washed with dilute caustic soda lye first of all, and then with water. This rule is important both for copper and for brass rollers, especially for the former. The printed goods are dried and rinsed and soaped either directly after drying or after an intermediate steaming for from two or three minutes at about 215° F. in the Mather & Platt.

Another contribution to the use of sulphur dyes in printing seems to proceed on exactly opposite lines. The Chemische Fabriken vorm. Weiler-ter Meer have discovered that a large number of sulphur dyes, when mixed under certain conditions with less than the usual amount of alkaline sulphide, form hitherto unknown compounds in which the alkaline sulphide is so closely combined that it loses its usual injurious action upon copper rollers. The additional advantage is claimed that these new compounds possess a greater dyeing power under the same condition. Concentrated caustic alkali decomposes these compounds in the cold weak lyes and solutions of alkaline salts act in the same way on steaming. Hence here is another field open in print styles if future investigations show that these new compounds can always be relied upon.

It is evident that all these processes here described could be dispensed with, were it possible to displace sodium sulphide as a solvent for the sulphur dyes in favor of some substance having no action on copper or brass. Something has already been done in this direction and commercial success may reward the efforts of Mr. Kur, of Prestwich, who uses xanthogenate of starch as a solvent for the dyes. The solvent is easily rinsed out with water after dyeing or printing. The xanthogenate is sufficient by itself for dyeing purposes, but for printing it must be combined with peroxide of hydrogen if full immunity of the copper rollers is to be secured. Xanthogenate of starch is analogous in composition to viscose, and prepared in the same manner, with the exception that solubilized starch, obtained by heating ordinary potato starch with a dilute caustic alkaline lye, is substituted for the cotton rags employed in the manufacture of viscose. The article does not appear to be yet on the market.

HOSIERY FIGURE DYEING MACHINES.

A dyeing machine for forming figured designs on hosiery, the patented invention of C. Scott Althouse, Reading, Pa., is shown at Fig. 1, which is a side elevation.

Between the side frames, extend a pulley shaft, a main shaft; similar cam-shafts and a crank-shaft.

The stockings to be operated upon in figure-dyeing and extracting, are commonly stretched upon board formers, and dye-blocks carrying the desired designs. After having the required dye (or dye-extracting material as the case may be) applied thereto, they are carefully placed in proper position and the impression, or successive impressions made in different colors. This new machine provides for making any desired number of impressions in passing the stockings through a single machine, the successive operations being effected automatically and with absolute accuracy without requiring special skill or care on the part of the operator.

The boarded stocking is firmly placed in

required position upon a fabric-carrier plate, which is moved horizontally, as hereafter described, in suitable guide-ways provided on the frame. Dye-blocks are adjustably fixed to separate carrier-bars, the ends of which are guided in vertically-slotted housings fixed to the machine frame above the horizontal guide-ways so as to permit of vertical movements of each dye-block as desired; such movements are effected in harmony with the fabric-carrier movements and with the action of the dye-feed belts. These belts, which serve to apply the desired dye or extracting material to each dye-block prior to the making of each impression, consist of separate strips of absorbent fabric, arranged in the form of endless belts and each carried upon a pair of drive-rolls located below the fabric-carrier guide-ways. Each of these pairs of drive-rolls is mounted in suitable bearings provided on a wall-bracket, which projects from a side-frame of the machine a sufficient distance to permit of employing a proper width of belt to contact with the whole surface of the dye-block. This bracket and its drive rolls are made shorter than the space between the spread side-frame so as to permit of readily placing and removing the endless feed-belts upon the drive-rolls. The slack portion of each feed-belt, when applied to the drive-rolls, dips into a dye-reservoir, suitably secured beneath, and is kept more or less taut as desired by means of a suitable tension roll, which is located within the dye-reservoir upon the slack of the moving belt, and which serves to stretch the belt fabric as required to insure proper feed of the dye or extractor material to the dye-block when the latter is brought into contact with it for that purpose.

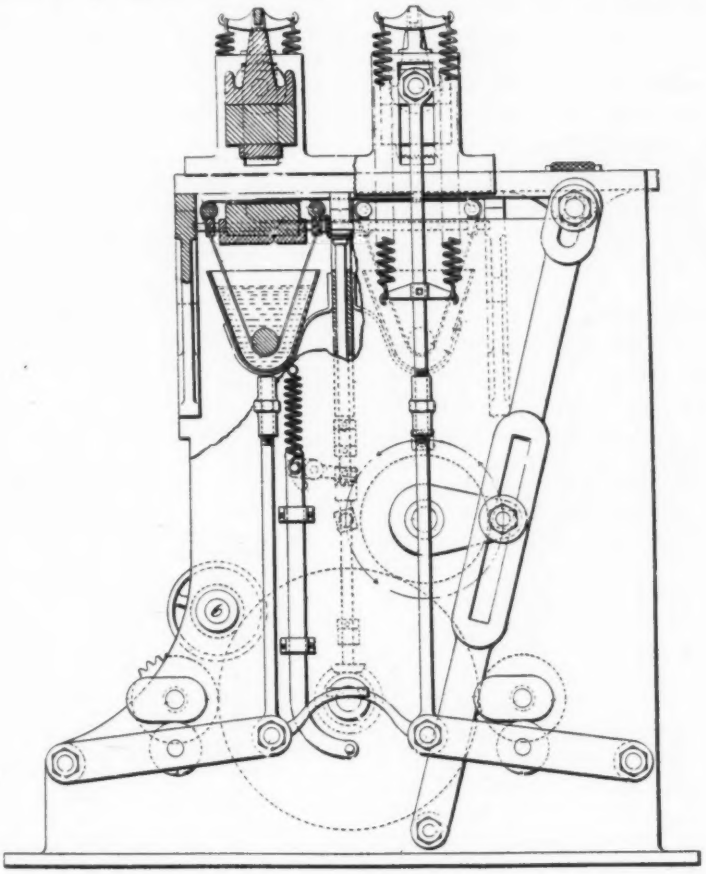
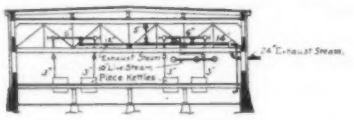


FIG. 1.

THE NEW DYE HOUSE AT THE WASHINGTON MILLS.

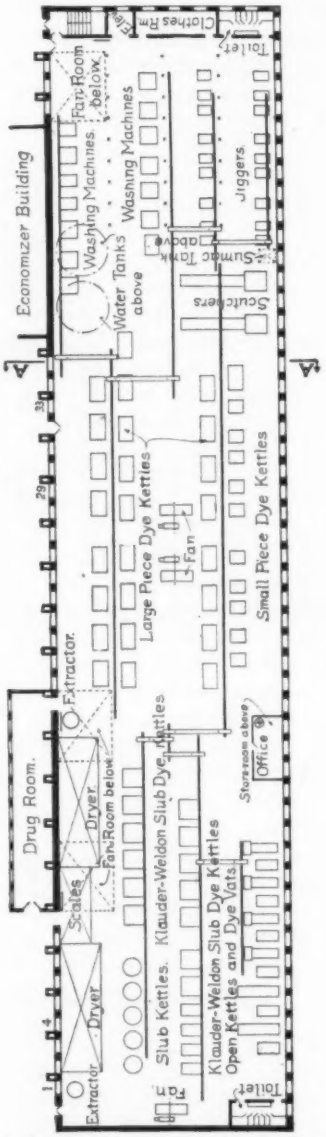
The plans for the new dye house recently built at the Washington Mills, Lawrence, Mass., were prepared by Charles T. Main, mill engineer and architect, Boston, Mass. The following particulars regarding this plant will be of general interest. The main building is 529 feet long, 11 feet wide and has one high story over the greater portion. The portion of the building, about 90 feet long and 111 feet wide, at the east end, has two stories. An office is situated on the



SECTION A-A

south side of the main building, 30 feet long and 14 feet wide, and is to be partitioned off. At the west end of the building is a gallery about 80 feet long at the level of the second floor, extending out into the main room about 20 feet. Another gallery on the north side, about 26 feet, extends from the two-story part west for 110 feet. The drug room is 102 feet long by 20 feet wide, and is one low story. In the main building there is a floor about 30 feet above the first floor, and a concealed space above this floor and under the roof. The walls are made of brick. The first floor is of wood and reinforced concrete. The second floor at the east end is made of wood. The third floor and galleries are built with beams and floor slabs all of reinforced concrete. The floor over the office is of wood with concrete beams. The roof is covered with tar and gravel. In the basement along the north side is a reinforced concrete duct for distributing hot air from the fans. The three fan rooms in the basement are enclosed in Portland cement plaster partitions 1 3/4 inch thick.

All the brick trench wall supporting the machines in the main building, as shown in the plans, are laid up in Portland cement mortar, composed of one part cement and two and one-half parts sand with just a dash of lime mortar for tempering. The floors in the toilet rooms and ventilating flues are of reinforced concrete, and are pitched to drain; all the necessary scuppers and drain pipes



MACHINERY PLAN

will be built in as needed. The beams, columns and floor slabs on the third floor are all of reinforced concrete. The second floor at the east end and that over the office are of wood, with reinforced concrete beams.

The concrete used in the columns, beams

and floor base is composed of one part American Portland cement, two parts sand, and four parts broken stone, except that portion used to work in around and beneath the lower rods of the beams on the floor. This latter mixture is composed of one part American Portland cement, one part sand and two parts pea-size crushed stone.

The roof timbers are of long leaf Georgia pine, planed three sizes with corners chamfered between bearings. The roof plank of Northern pine, 3 inches thick, planed on one side and splined or tongued and grooved, and covered with six-ply tar and gravel roofing.

DYE RECIPES.

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 81.

Brown on Cotton Yarn.

Thioxine Brown G on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Thioxine Brown G.
(Geisenheimer & Co., 189 Front St., N. Y.)
5 lbs. Sodium Sulphide (Conc.).
8 lbs. Soda Ash.
70 lbs. Glauber's Salt (Crystals).

Dissolve the color with sodium sulphide as usual. Add to the dye bath, boil up and skim. Then add the Glauber's salt or common salt.

Enter the boiled out yarn into the boiling dye bath and dye at a boiling temperature for one hour, after which the yarn is quickly squeezed out and rinsed.

Thioxine Brown G will be found to possess the characteristic fastness of the sulphur colors.

Note.—For a running bath 6 lbs. of color may be used.

Recipe No. 82.

Blue on Cotton Yarn.

Katigen Indigo 2 R L Extra on 100 lbs. cotton yarn, in conjunction with Katigen Intensifier B. Prepare the dye bath with

10 lbs. Katigen Indigo 2 R L Extra.
(Farbenfabriken Co., 66 Lafayette St., N. Y.)
20 lbs. Sodium Sulphide (Crystals).
5 lbs. Katigen Intensifier B.
50 lbs. Glauber's Salt (Crystals).

Dye at a temperature just below a boil for one hour, keeping the material below the surface of the liquor as much as possible. For succeeding baths these amounts may be reduced considerably.

Katigen Intensifier B is a product which when employed with any of the Katigen Indigo Blues, with Katigen Blue B, or Katigen Dark Blue R Extra, yields deeper and more level shades than is possible to obtain by the old method. It is advisable to strew the Katigen Intensifier B in the powdered form into the dye liquor prepared in the usual manner, at a temperature of not above 85° to 100° F. It causes the dyestuff to be much more reduced, and the shades to oxidize much less quickly, and consequently to come out more level. Besides this, considerably deeper shades of equally good properties as before can be obtained.

Recipe No. 83.

Red on Cotton Yarn.

Tetranil Red F U on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Tetranil Red F U.
(American Dyewood Co., 154 William St., N. Y.)
30 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Tetranil Red F U gives red shades of excellent fastness to light and good fastness to acids. In union dyeing it colors cotton and wool the same shade. By after-treatment with chromium fluoride its fastness may be increased.

Recipe No. 84.

Brown on Worsted Yarn.

Fast Chrome Brown K on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Fast Chrome Brown K.
(A. Klipstein & Co., 122 Pearl St., N. Y.)
10 lbs. Glauber's Salt.
2 lbs. Formic Acid.

Enter at 140° F., raise to a boil and dye at a boiling temperature for 45 minutes, then add

2 lbs. Formic Acid

and boil 15 minutes longer. Finally add

1½ lbs. Potassium Bichromate

and continue the boiling for 30 minutes, when the material is washed and dried.

Fast Chrome Brown K is particularly fast to fulling and light, and will be found an excellent substitute for mordant colors.

Recipe No. 85.

Blue on Worsted Yarn.

Mercerol Blue B on 100 lbs. worsted yarn. Prepare the dye bath with

5 lbs. Mercerol Blue B.
(Read Holliday & Sons, 7 Platt St., N. Y.)
10 lbs. Glauber's Salt.
3 lbs. Acetic Acid.
2 lbs. Sulphuric Acid.

Enter at boiling point and boil for 5 minutes in order to dissolve the color and the salts. The cistern is run up with cold water and 3 to 5 lbs. acetic acid added. The bath is stirred and then the material is entered. Mercerole Blue is adapted to nearly all classes of woolen dyeing. Its fastness to light, milling, stoving, acids, hot pressing, acids and alkalies is very good.

Recipe No. 86.

Green on Cotton Yarn.

Immedial Green B B Extra on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Immedial Green B B Extra.
(Cassella Color Co., 182 Front St., N. Y.)
10 lbs. Sodium Sulphide.
10 lbs. Common Salt.
10 lbs. Soda Ash.

Dye at a temperature just below a boil for one hour, keeping the material below the surface of the liquor as much as possible.

If a standing bath is used, these amounts can be greatly reduced in the second and succeeding baths.

Immedial Green B B Extra possesses good fastness and the characteristic properties of the sulphur colors.

Recipe No. 87.

Yellow on Cotton Yarn.

Dominion Yellow O on 100 lbs. cotton yarn. Prepare the dye bath with

5 lbs. Dominion Yellow O.
(F. E. Atteaux & Co., 176 Purchase St., Boston, Mass.)
40 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Dominion Yellow O is dyed with a large amount of common salt, and when treated in a fresh bath with

2 lbs. Formaldehyde,

or with a mixture of

2 lbs. Potassium Bichromate

and

2 lbs. Formaldehyde

in boiling bath, good dyeings which will stand any amount of fulling are produced. It is therefore valuable in dyeing cotton yarn which is to be used in combination with worsted yarn in the manufacture of worsted piece goods.

Recipe No. 88.

Green on Worsted Yarn.

Fast Chrome Green 3 G on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Fast Chrome Green 3 G.
(A. Klipstein & Co., 122 Pearl St., N. Y.)
10 lbs. Glauber's Salt.
2 lbs. Formic Acid.

Enter at 140° F., raise to a boil and dye at a boiling temperature 45 minutes, then add

2 lbs. Formic Acid

and boil 15 minutes longer. Finally add

1½ lbs. Potassium Bichromate

and continue the boiling for 30 minutes, when the material is washed and dried.

Fast Chrome Green 3 G is particularly fast to fulling and light, and will be found an excellent substitute for mordant colors.

Recipe No. 89.

Yellow on Worsted Yarn.

Monochrome Yellow G on 100 lbs. worsted yarn. Prepare the dye bath with

1 lb. Monochrome Yellow G.
(H. A. Metz & Co., 122 Hudson St., N. Y.)
5 lbs. Ammonium Acetate.
½ lb. Potassium Bichromate.

Enter the material at 160° F., bring slowly to a boil and dye at a boil for 1 to 1 1/2 hours.

Monochrome Yellow G is of a new group of dyestuffs which seems to offer many advantages. They are in reality after-chrome colors dyed in a single bath, with the use of ammonium chromate, the latter compound being produced in the dye bath by the action of ammonium acetate with potassium bichromate.

They dye level, are easily matched and possess excellent fastness to light, fulling and other finishing processes. They are recommended for all sorts of fast dyeing, where the color is not too heavy.

Recipe No. 90.

Blue on Woolen Cloth.

Acid Cyanine B on 100 lbs. woolen cloth. Prepare the dye bath with

4 lbs. Acid Cyanine B.
(Berlin Aniline Works, 213 Water St., N. Y.)
4 lbs. Sulphuric Acid.
20 lbs. Glauber's Salt.

Enter at 150° F., bring slowly to a boil and dye at a boil for one hour.

Acid Cyanine B possesses good leveling and penetrating power. Its fastness to alkalies is excellent, and its fastness to light, weather, carbonizing and washing is good.

Recipe No. 91.

Brown on Cotton Yarn.

Thioxine Brown G R on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Thioxine Brown G R.
(Geisenheimer & Co., 189 Front St., N. Y.)
5 lbs. Sodium Sulphide (Conc.).
8 lbs. Soda Ash.
35 lbs. Glauber's Salt (Calcined).

Dissolve the color as usual with sodium sulphide. Add to the dye bath, boil up and skim. Then add the Glauber's salt or common salt.

Enter the boiled out material into the boiling bath and dye at a boiling temperature for one hour, after which the yarn is quickly squeezed out and rinsed.

Thioxine Brown G R will be found to possess the characteristic fastness of the sulphur colors.

Note.—For a running bath 6 lbs. of color may be used.

Recipe No. 92.

Gray on Worsted Yarn.

Monochrome Gray G on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Monochrome Gray G.
(H. A. Metz & Co., 122 Hudson St., N. Y.)
6 lbs. Ammonium Acetate.
1 lb. Potassium Bichromate.

Enter the material at 160° F., bring slowly to a boil and dye at a boil for 1 to 1 1/2 hours.

Monochrome Gray G is of a new group of dyestuffs which seems to offer many advantages. They are in reality after-chrome colors dyed in a single bath, with the use of ammonium chromate, the latter compound being produced in the dye bath by the action of ammonium acetate with potassium bichromate.

They dye level, are easily matched and possess excellent fastness to light, fulling and other finishing processes. They are recommended for all sorts of fast dyeing, where the color is not too heavy.

Recipe No. 93.

Brown on Cotton Yarn.

Thioxine Brown 2 B G on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Thioxine Brown 2 B G.
(Geisenheimer & Co., 189 Front St., N. Y.)
5 lbs. Sodium Sulphide (Conc.).
8 lbs. Soda Ash.
70 lbs. Glauber's Salt (Crystals).

Dissolve the color as usual with sodium sulphide, add to the dye bath, boil up and skim. Then add the Glauber's salt or common salt.

Enter the boiled out material into the boiling bath and dye at a boiling temperature for one hour, after which the yarn is quickly squeezed out and rinsed.

Thioxine Brown 2 B G will be found to possess the characteristic fastness of the sulphur colors.

Note.—For a running bath 6 lbs. of color may be used.

Recipe No. 94.

Brown on Worsted Yarn.

Mercerol Brown 3 R on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Mercerol.
(Read Holliday & Sons, 7 Platt St., N. Y.)
10 lbs. Glauber's Salt.
3 lbs. Acetic Acid.
2 lbs. Sulphuric Acid.

The cistern is partly filled with boiling water, the necessary amount of color and 10 lbs. Glauber's salt is thrown in and allowed to boil 5 minutes in order to dissolve them. The cistern is run up with cold water and 3 to 5 lbs. acetic acid added, the bath stirred and then the material entered. The bath is brought to a boil in 1/2 to 1 hour, boiled half an hour, then 1 to 2 lbs. sulphuric acid is added and boiling continued half an hour. Mercerol Brown 3 R may be used in all branches of dyeing, where a fast color is required.

Recipe No. 95.

Blue on Cotton Yarn.

Naphthogene Blue B on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Naphthogene Blue B.
(Berlin Aniline Works, 213 Water St., N. Y.)
20 lbs. Glauber's Salt.
1 lb. Soda Ash.

Dye at a boil for one hour, then diazotize in a cold bath made up with

3 lbs. Sodium Nitrite,
6 lbs. Sulphuric Acid.

Then develop in a cold bath made up with

1 lb. Beta Naphthol,

dissolved in

1 lb. Caustic Soda 76° Twaddle.

Naphthogene Blue G will be found to be well adapted for all branches of fine cotton dyeing. It possesses good fastness to most of the color destroying agencies.

Recipe No. 96.

Pink on Worsted Yarn.

Azo Eosine E B B on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Azo Eosine E B B.
(C. Bischoff & Co., 451 Washington St., N. Y.)
15 lbs. Glauber's Salt.
4 lbs. Sulphuric Acid.

Enter at 180° F. and dye at a boil for one hour.

Azo Eosine E B B possesses excellent fastness to sunlight.

Mill News.

Those interested in receiving early and more complete investigated information of projected new mills, enlargements, improvements, fires facts and gossip of the trade are referred to the Textile Advance News, issued weekly by the publishers of the Textile World Record, at $15.00 per year.

COTTON.

New Mills.

*Alabama, Childersburg. The Coosa River Spinning Co. has practically completed its manufacturing building. the mill is one story high, 108 by 208 ft. and will be equipped with 10,000 spindles for manufacturing cotton yarns. Two warehouses, each 50 by 100 ft., are also being erected and are rapidly nearing completion. As reported in January, machinery will not be installed by this company until July or August. M. B. Lewis of Birmingham, Ala., is sec. and treas.

*Canada, Ontario, Hamilton. The Bell Thread Co., Ltd., previously reported as securing the property formerly occupied by the Ontario Canning Co., will manufacture threads of all plys, counts and colors. It is understood that a complete equipment will be installed, including dye house and bleachery. Walter E. Bell is president and general manager; John S. Mellor is treasurer.

*Canada, Quebec, Montreal. The Mt. Royal Spinning Co., reported incorporated in February, 1907, and later reported to be erecting a large cotton mill at Cote St. Paul, are getting the new plant into shape and expect to be running early next month. The engine and boilers are in place and the spinning and weaving machinery is being received and installed. For the present, only gray cloths will be the product, but the company has decided to erect a bleachery later on, which it is expected will be in operation by the end of the year.

Georgia, Tallapoosa. About one-half of the total equipment of 10,000 spindles is in operation at the Tallapoosa Mills, Inc. The total equipment will be 10,000 spindles. The work of setting up the balance of the machinery necessary to make up the full equipment is going forward. The present buildings are large enough to allow of a further installation of 2,500 spindles, making a total of 12,500 spindles which will be operated when the full space is occupied. The Tallapoosa Mills, Inc., have capital stock of $200,000. A. L. Jackson is president.

*Maine, Old Town. At a mass meeting held to further plans for the proposed new cotton mill, a general committee of business men was chosen and will endeavor to place $200,000 worth of stock in this neighborhood. The committee consists of the following men: J. W. Harmon, C. W. Robbins, Geo. H. Richardson, L. N. Beaulieu, Geo. Terrien, Thos. Murphy, H. F. Bailey, C. E. Sutton, N. G. Gould, Alex. Fraser, S. B. Gray, J. W. Sewall, C. E. Lunt, V. E. Tucker, J. H. Ambrose, A. P. Carrow, the Rev. Geo. S. Robinson, Dr. G. E. Landry, A. B. Larcher, Wm. H. Waterhouse, M. H. Richardson, W. E. Hellenbrand, C. E. McLeod, G. W. Hathorn of Milford and F. C. Barton of Bradley.

*New Jersey, Hoboken. In December it was stated that the Ayvad Mfg. Co., manufacturers of a patented article for the use of persons learning to swim, known as "Water Wings," would equip a plant for making cloth used in their product. 3,500 spindles and 24 looms have been set up and are in operation, giving employment to about 30 hands. H. A. Ayvad is president and buyer and George Appel is agent. This department of the Ayvad Mfg. Co. is known as the Clinton Mills Co.

*New Jersey, Passaic. The Passaic Buckram Mfg. Co., reported incorporated in March with capital stock of $25,000, began the production of their line of buckram, cheese-cloth and nestle on April 15. They have leased space suitable for manufacturing and in the near future will weave their own cloths. They are interested in information on complete equipment for carding, spinning, weaving and finishing cotton cloths. Frank S. Slaff is pres., Oswalf E. Schneider is vice pres. and treas., Richard Keller is supt., and B. Von Suskill is sec. The company may be addressed at 237 Hope Ave.

New York, Minetto. The Columbia Shade Cloth Co., of New York, has bought the plant of the Minetto Shade Cloth Co. for a consideration, it is stated, of $500,000.

*North Carolina, Charlotte. Construction work will begin during the late summer on buildings for the Sargent Cotton Mfg. Co., which was incorporated last December with authorized capital stock of $50,000. Plans include the installation of 3,000 ring spindles and a complete electric power plant for the manufacture of 60s to 80s yarns. Sumner B. Sargent, who is at the head of this project, recently purchased the interest of Thos. J. Lillard in the Fidelity Mfg. Co. Mr. Sargent advises that he is not ready at this time to consider the matter of equipment.

*North Carolina, Wendell. As reported sometime ago, R. B. Whitley has begun the construction on his new cotton mill. A building 50 by 200 ft. with separate engine and boiler room is being built and it is expected to be completed by July 1. A 150-horse-power high-pressure boiler and 100-horse-power engine will be installed in the power building. Contract for engine and boiler has not been given out, but Mr. Whitley expects to purchase them in June. Machinery contract will be given out in August. The equipment will be 3,000 spindles for manufacturing 14s hosiery yarns.

*South Carolina, Calhoun Falls. The Calhoun Mills has reorganized and elected new officers. James P. Gossup is the new president and treasurer, E. M. Lander, secretary, and W. Y. Harrison, superintendent. The new officers have begun to complete the plant and install machinery and will probably begin manufacturing with an initial equipment of 15,600 spindles and 400 looms. Electricity will be employed as power. Wide print cloth for

converting will be manufactured. The Calhoun Mills were originally organized in 1906 and were granted a charter with capital stock of $400,000. The buildings were planned for 25,000 spindles and 600 looms and the company will no doubt eventually increase the equipment to that number.

*South Carolina, Gaffney. The buildings for the new Merrimac Mills are practically completed and the company has begun the installation of machinery. The complete equipment will be 10,240 spindles and 300 looms to be operated on convertible cotton goods. The electric power company which has contract for supplying power has made rapid development and will shortly be in a position to supply the plant with power. Officers and details of this plant have been given previously.

*South Carolina, Newberry. Plans have not been completed for the buildings and equipment of the Highland Cotton Mills, which was incorporated in November with a capital stock of $300,000. T. Martin and G. S. Mower are at the head of this company.

*South Carolina, Rock Hill. The installation of machinery in the new plant of the Harriss Mfg. Co. is nearly completed. Collar pads and coarse yarns will be manufactured. Complete details of this company have been given.

*Virginia, Bedford City. James P. Grey of the New Bedford Cotton Mills Co. advises that the erection of buildings has been postponed indefinitely.

Enlargements and Improvements.

*Connecticut, Danielson. It is again reported that the Danielson Cotton Co. will erect a new mill. It is stated that if land can be secured at a reasonable price the new building will be located in Danielson, otherwise it will be located in Pomfret where the company is to build a new dam.

*Connecticut, Willimantic. The work of cleaning out No. 1 Mill of the American Thread Co. of all machinery and installing it in the new No. 6 Mill, has been started. The printing department and a branch of the finishing department will in the future be in No. 6 Mill, while No. 1 will be used as the shipping department and as a stock room for finished goods.

*Georgia, Elberton. Plans are prepared by the Swift Cotton Mill for a dyehouse which will be larger and better equipped than the one recently destroyed by fire. Construction work will start at the earliest date possible. All new machinery will be installed in the dye house. A new warehouse also will be built.

Massachusetts, Chicopee Falls. Improvements have begun in No. 4 mill of the Chicopee Mfg. Co. which will largely increase the power of the plant. Two old water wheels will be replaced by the latest style turbines and a steel flume.

*Massachusetts, New Bedford. The new storehouse to be built for the Beacon Mfg. Co. will be 3 stories high and 100 ft. square, instead of 2 stories high as previously reported. The cost will be $24,000. None of the added space will be used for manufacturing. Jeremiah Williams is president of the Beacon Mfg. Co., Chas. D. Owen, treasurer, Chas. O. Dexter, agent and William J. Kerwin, superintendent. Mr. Dexter is buyer.

*Massachusetts, Winchendon. Construction work has started on the new mill for Nelson D. White & Sons. Details of the new building have been previously given.

*North Carolina, Charlotte. The Chadwick-Hoskins Co. has made a contract with the Westinghouse Co. for about $40,000 worth of electrical equipment to be installed in the Chadwick, Hoskins. and Louise Mills. The Southern Power Co. has the contract to supply power, and it is reported will build a large sub-station at the mills. The Chadwick-Hoskins Co. was recently granted a charter with capital stock of $3,000,000, and consolidated the Dover Yarn Mills, Chadwick Mfg. Co., Calvine Mfg. Co., Hoskins Mills, Inc., and the Louise Mills. E. A. Smith is pres., W. F. Draper, vice pres., and A. J. Draper, treas.

North Carolina. Charlotte. The Highland Park Mfg. Co. contemplates the erection of an addition to enlarge its finishing plant, also the erection of a new office building. Stuart W. Cramer has drawn plans of building 40 by 80 ft. Contracts for new machinery have not been given out.

North Carolina, China Grove. Arrangements are being made by the Paterson Mfg. Co. by which the Southern Power Co. will supply electricity to drive their machinery. The Paterson Co. manufactures brown sheetings and skein and hosiery yarns on 12,000 spindles and 158 broad looms. A new mill is being erected by this company at Kannapolis.

*North Carolina, Henderson. It is reported that the Harriet Cotton Mills will increase its capital stock from $300,000 to $400,000 and erect another new mill. No. 2 mill is practically completed but no machinery has been contracted for. The equipment will be 12,000 spindles with preparatory machinery. It is not known what department of manufacturing will be carried on in the proposed No. 3 mill.

*North Carolina, Hope Mills. The Aberfoyle Corp. has decided to increase the weaving capacity of the Hope Mills Mfg. Co. As previously reported, the finishing department in the Hope plant will be discontinued, all finishing being done at the Aberfoyle Corp. in Chester, Pa. The machinery will be taken out and in its place 344 looms will be installed. Fine cotton goods are manufactured.

*North Carolina, Kings Mountain. The Anna Cotton Mills, reported incorporated in March with capital stock of $95,000, is a reorganization of the Crowder Mountain Cotton Mill, for which a receiver was appointed in October, 1907. J. S. Mauney is president. Mr. Mauney is also president of the Bonnie Cotton Mills and of the Klotho Mills, Inc. It is reported that the power plant will be changed from steam to electric power.

*North Carolina, Roanoke Rapids. The capital stock of the Roanoke Mills Co. is now $408,600. A 2-story addition 123 by 100 ft. has been completed and in the near future 8,000 more spindles and about 200 looms will be added. We are advised that this increase will not take place before the fall.

WOOLEN.

New Mills.

*Massachusetts, Lawrence. A number of looms have been started on dress goods in the new plant of Joshua D. Armitage & Co. Additional looms will be added until equipment is brought up to 24.

*Rhode Island, Providence. The work of building an addition to the Chase plant and remodeling the old building for the Colored Worsted Mills is nearly completed. In about 10 days, this work will be finished.

Rhode Island, Providence. Hills & Nichols, Boston, have secured the old Pocasset Combing Co.'s plant and after repairs are completed, which embrace the enlarging of the wool sorting department, will start it up on worsted tops. The plant will be known in future as the Providence Combing Co.

Enlargements and Improvements.

Canada, Nova Scotia, Glendyer. The Hopewell Woolen Mills, J. L. McDonald, proprietor, have been consolidated with the plant of McDonald Brothers of this place to form the Glendyer Woolen Mills, Ltd. A charter has been secured with a capital stock of $40,000, and the combined plants are now operating as one at this place, and make the lines formerly operated by the separate plants. They expect to add machinery shortly for manufacturing toques and boys' and men's sweaters. Cotton warps and cashmere knitting yarns are bought.

*Connecticut, Stafford Springs. The 58 by 30 ft. addition now being built for the Central Mfg. Co. is an enlargement of the finishing department. Other plans for improvements include the addition of one set of cards and new finishing machinery. 4 looms were recently added to the weaving department and the addition to other departments is in the nature of balancing the various departments. Cyril Johnson is owner of the plant and buyer.

*Maine, Foxcroft. Mayo & Son, Inc., are ready to start upon the erection of a new cement structure to be operated as an addition to the present woolen mill. The new building will be 125 ft. long and will be located on the site of the old foundry torn down some time ago. When completed the new building will be equipped with machinery used in the manufacture of their line of woolen goods.

*Massachusetts, East Brookfield. Work of installing a new water wheel in the No. 1 Mill of the Mann & Stevens Woolen Company is progressing.

*Massachusetts, Lowell. The Massachusetts Mohair Plush Company is erecting at a cost of $2,000, a new power house of modern mill construction and which will be as near fireproof as possible. As previously reported, a new engine and boilers, to be installed in the new power house, have been ordered.

Massachusetts, North Adams. An order for 25 new looms has been placed with the Crompton & Knowles Loom Works by the Mayflower Worsted Mills. The Mayflower Co. is running overtime 5 nights a week.

New Jersey, Passaic. The Forstmann-Huffmann Co., manufacturers of men's and women's wear with 14 sets, 12,000 mule spindles and 350 looms, dye and finish; who are increasing their power department by an addition of new boilers have also installed a filter plant supplied by Hungerford & Terry, filtration engineers, Penna. Building, Phila., the plant having a capacity of 1,800,000 gallons per day, to be used for utilizing water from the Passaic River.

New Jersey, Passaic. Permits have been issued for another addition, 4 stories high, 130 by 188 feet, to be erected for the Botany Worsted Mills at a cost of approximately $90,000.

New York, Amsterdam. A large storehouse is being built for Stephen Sanford & Son, manufacturers of carpets and carpet yarns.

*Ohio, Cleveland. The Cleveland Worsted Mills are going ahead with improvements and extensions previously reported. It is estimated that the completion of the planned improvements will require an outlay of about $200,000. George S. Rider Co., consulting engineers, have just completed plan and awarded contract for a 6-story brick building, 80 by 160 feet, which will be erected on Broadway. The work on the new office building is progressing. This is a 3-story structure, 50 by 55 feet. The new boiler house is nearly completed.

Pennsylvania, Chester. The Thompson Worsted Co., 3d and Kingston Sts., will shortly erect a large modern addition. This company has capital stock of $20,000 and makes worsted tops.

*Pennsylvania, Philadelphia. It is reported that the Yorkshire Worsted Mills, operating 4 sets and 250 looms on men's wear worsteds and piece dyes at Lenni Mills, with a branch mill at Coral and Adams Sts., this city, containing 40 looms, are negotiating for the purchase of the plant operated by the Southwark Mills Co., at 31st and Reed Sts., which contains about 200 looms. The price offered, it is said, is in the neighborhood of $75,000.

Pennsylvania, Philadelphia. The Shelbourne Mills, manufacturers of men's wear on 100 broad looms at H St., Westmoreland Ave. and Shelbourne St., with an annex in the Lomax Mills at Jasper and Orleans Sts., are about to erect an addition of brick, 4 stories high, 50.8 by 110 feet, at a cost of $50,000. Construction work will begin at once.

*Rhode Island, Washington. Upon the completion of the new addition to the Livingston Worsted Co., ten Crompton & Knowles looms will be put in place. Construction work on the addition is practically completed.

*Rhode Island, Woonsocket. The River Spinning Co. was shut down last week during altrations incident to changes in its equipment. It was reported in January that the River Spinning Co. would add a department for weaving men's wear worsteds and it is understood that one floor of the mill will be used for this purpose. Several pairs of woolen mules have been taken out and are to be sold to make room for the new worsted equipment.

Mills Starting Up.

Massachusetts, Pittsfield. The upper mill of J. L. & T. D. Peck Mfg. Co. has started up with a full force of hands and will be operated 3 days a week for the present. The mill has been shut down some time owing to the depression and to the need of repairs. The Pontoosuc Woolen Mfg. Co.'s plant will resume operations in all departments on May 18.

*Minnesota, St. Cloud. The St. Cloud Woolen Mills, Inc., has started manufacturing under the management of Simon Taylor, formerly of Spencer, Mass. This company has a capital stock of $10,000, and an equipment of two sets of cards and two broad looms. Knitting yarns and heavy flannels and blankets for the Western trade will be made.

MISCELLANEOUS.

*Connecticut, Meriden. In the near future the plant of the Meriden Curtain Fixture Co. will shut down and business be removed to Minetto, N. Y. We reported last week the purchase of the Minetto Co.'s plant by the Columbia Shade Cloth Co. of New York, which is interested in the local company. I G. Cooley, agent, is at present in Minetto arranging for the removal.

Connecticut, Tariffville. The Tariffville Lace Mfg. Company has shut down and it is reported that the plant will be sold.

Delaware, Wilmington. The Brandywine Bleachery is just beginning operations. Turkish towels and similar goods will be bleached and finished. Mr. Winnifred is in charge.

Illinois, Zion City. Marshall Field & Co. have placed an order for additional machinery which will be installed immediately upon its arrival in the plant of the Zion Lace Industries. Machinery is being imported.

*Maine, Alfred. L. C. Akers, clerk of the Alfred Embroidery Co., recently incorporated with capital stock of $100,000, advises that $40,000 has been subscribed by local interests. A new building will be erected, just above the old Alfred Woolen Mills, during the Summer, in order that production may begin during October or November. Laces and embroideries will be the output. B. C. Jordan is pres. of the company, S. M. Came, treas., and B. C. Jordan, H. C. Lord, W. A. Illagan, F. J. Allen, G. L. Chadbourne, R. S. Stanley and C. E. Landers, directors. W. A. Illagan will be supt.

*Maryland, Elkton. It is reported that Diebert & Wilson, whose plant was destroyed by fire with a loss of practically $50,000, will rebuild.

*Massachusetts, Brockton. It is reported that Hutton & Lapworth will erect a one-story building 60 ft. square on Summer St., to be equipped for manufacturing elastic webbing. This company was mentioned in April as ordering 8 looms of the Crompton & Knowles Loom Works.

Massachusetts, Easthampton. At a meeting of the stockholders of the Glendale Elastic Fabric Co. it was decided to increase the capital stock.

*Massachusetts, Everett. The new building erected for the Shultz-Goodwin Co. Inc., reported some months ago, has been completed. 50 braiding machines and 20 looms for manufacturing narrow fabrics have been installed and part of the machinery is now in operation. This company bought out the Wm. M. Rodger Mfg. Company of Lowell, which was a running plant, and has combined this in the new plant at Everett with their old plant at 16 Columbia St. Boston. Chas. Goodwin is pres., W. A. Shultz, treas., agt. and buyer and Wm. M. Rodger, is supt. The office of this company is at 31 Lincoln St., Boston.

*Massachusetts, North Andover. The contract for construction work on the new boiler house for the Brightwood Manufacturing Co. has not been let. Plans and specifications have been completed by H. H. Smith which call for a one-story brick structure 65 by 50 ft. It is understood that this addition and a number of other improvements will be completed during the summer.

Massachusetts, North Cambridge. The American Circular Loom Co. will not rebuild its plant in Chelsea. A building has been secured in North Cambridge on Clarendon Ave., and it is being remodelled to receive the equipment. New machinery is being built and it is expected that they will resume manufacturing their line of flexible conduits in two or three weeks. The Boston office of the American Circular Loom Co. is at 45 Milk St.

*Massachusetts, Winchester. The Chas. N. Bacon Felt Works, for which a receiver was appointed last November, has been reorganized as the Bacon Felt Co., and started manufacturing the old line of wool felt goods and buffing wheels on May 18. W. G. Smith is president of the new company, Dwight Smith is treasurer and agent, and Chas. Bacon is secretary. The equipment comprises 13 sets of cards and 2 pickers.

*Missouri, St. Louis. The St. Louis Embroidery Co., Crittenden McKinley, mgr., has awarded contract for the erection of mill buildings to cost $15,000. This company operates 6 Swiss embroidery machines and about 40 special sewing machines on embroidered goods.

*New Hampshire, Milford. The Middlesex Linen Co.'s plant started up Monday morning upon the completion of needed repairs. The plant shut down the first of the month.

New Jersey, Camden. The Franklin Narrow Fabric Company, recently incorporated to take over the business of the Stokes & Taylor Co., located at 3d and Federal Sts., where they operated 8 looms and 6 braiders on narrow fabrics, shoe laces and braids of silk, cotton and mercerized yarns, have shut down the plant, the prospects being that it will not be started up again.

New Jersey, Paterson. The Barbour Flax Spinning Company will, on July 1st, take over the old Granite Mills and use the building for manufacturing. The building will be remodelled and equipped with new machinery before operations commence.

*New Jersey, Trenton. The O'Brien Rubber Thread and Webbing Co. has been incorporated

and will equip a plant for the manufacture of rubber thread, elastic and electric webbing, starting with a paid-in capital of $3,000. An office has been opened at 147 East State St. Anthony T. Williams is in charge.

*North Carolina, Lynn. Operations have started in the Pacolet Finishing Co.'s plant at this place. This corporation was organized in February by officers of the Skyland Hosiery Co., Flat Rock, N. C., and the Tryon Hosiery Co. of Lynn, N. C., for the purpose of dyeing and finishing their product. Its capacity is 2,500 lbs. daily. The capital stock is $125,000. John F. Wilcox is president and buyer, and H E. Stillwell is treasurer.

*Pennsylvania, Lansdowne. Wm. Hall & Co., proprietors of the Union Mills, have not begun manufacturing on their new line of Union huck towels. It will be remembered that the original mill of this concern in which shoddies and garnetted waste were manufactured, was burned some months ago. The plant has been rebuilt and 30 looms have been set up for the manufacture of towels. They expect to get in operation as soon as business improves.

Pennsylvania, Philadelphia. The Industrial Dyeing & Finishing Works has completed the installation of a plant, very much increasing their capacity on worsted and union piece dyes and running this department on full time. This company makes a specialty of union piece dyeing.

Pennsylvania, Philadelphia. Contract for the new dyehouse which we reported previously would be built for Brehm & Stehle has been awarded to Charles W Denney and construction work has started. The new building will be one story high, 40 by 72 ft.

Texas, San Angelo. Messrs. Cook & Bennett will establish a plant for manufacturing rag carpets and rugs. A number of looms have been received and operations will begin as soon as machinery can be set up. Cotton warp yarns will be bought.

*Wisconsin, Waupaca. The Directors of the Waupaca Felting Mills are preparing to start construction work on the proposed new dye house. The capital stock of this company is now $50,000. Felt hat bodies are manufactured.

FAILURES AND SUSPENSIONS.

Alabama, Eufaula. The Eufaula Cotton Mills are in the hands of a receiver. No statement of assets and liabilities has been given out. The plant has been shut down for several months. The Eufaula Mills manufacture 4 and 5 yard sheetings on 12,500 ring spindles and 353 broad looms.

Massachusetts, Franklin. Application was made by Robert Gallagher, counsel for the Cleveland Worsted Mills Co. and the Squam Lake Woolen Co., for a receiver for the Bart Linn Woolen Co., and F. P. Cabot of Boston, was appointed. The liabilities are $31,396, and the assets $22,646. The Cleveland Co. has a claim of $1727, and the Squam Lake Co. one of $459. The Bart Linn Woolen Co. has capital stock of $25,000 and manufactured wool and worsted cloths on 34 broad looms.

Massachusetts, West Rutland. Fred R. Smith, manufacturer of woolens on 2 sets and 64 narrow looms, has filed a voluntary petition in bankruptcy. The liabilities are given as $87,294.92 and assets, $77,408.51.

FIRES.

Canada, Toronto. The building on Adelaide St., occupied by the Canadian Silk Co., was recently destroyed by fire, with a loss of $200,000. They operated 20 looms, by electricity, on silk labels.

Maryland, Elkton. The plant of Deibert & Wilson, manufacturers of Turkey red damask and plaid table cloths on 40 looms, has been destroyed by fire. The loss is estimated at about $50,000, with insurance of $40,000.

New York, New York. Fire completely glutted the offices located at 495 Broome St., in which were located the New York office of Holland & Web, cotton, worsted and silk yarns; F. A. Crapo, silks, and Davis & Quick, dyers and bleachers. Temporary offices were opened at once at 497 Broome St.

Pennsylvania, Philadelphia. William O'Neill's tenement mill at Josephine and Oxford Sts., Frankford, has been almost destroyed by fire. The tenants and the losses estimating by them are as follows: Wm. O'Neill, owner of the buildings and manufacturer of damasks and cotton and linen dress goods, 86 broad and 58 narrow looms, $75,000; Devonshire Woolen Mills, S. W. Goldsmith, proprietor, dress goods and men's wear, 26 broad looms, $2,000; Primrose Tapestry Co., James Newton, proprietor, tapestry curtains, table covers and novelties, 6 looms, $2,500; Reno Manufacturing Co., McConville and John Hasley, Jr., proprietors, 48 narrow looms, dress goods, $2,000; and A. Rhoads, manufacturer of art squares, 5 looms, $2,000. It is said that the mills will be repaired and again put in operation as soon as the insurance has been adjusted.

FACTS AND GOSSIP.

Connecticut, Glenville. It is reported that the local plant of the American Felt Co., which is now closed, will not manufacture the line of woolens which has been made there for years, when the plant starts up again. It is probable that felts will be the product. James H. Hunt, who has been superintendent of the plant, has closed his business connection with the concern.

*Connecticut, Willimantic. The American Thread Co. has established a bonded warehouse in this city owing to the fact that the company has purchased over a half million dollars worth of cotton. The work of removing the machinery from No. 1 mill to the new No. 6 mill is progressing.

*Georgia, Ashburn. J. S. Shingler advises that the promoters of the Shingler Cotton Mills Co. have abandoned the erection of their plant for this year. This company secured charter with authorized capital stock of $250,000, in December. They

proposed to build and operate a plant of 10,000 spindles and 300 looms.

*Georgia, Atlanta. The old Atlanta Cotton Mill property reported purchased by Asa Chandler and D. B. Carson will be used for a bonded warehouse.

*Georgia, Barnesville. The new owners of the Aldora Mills have reorganized with the following officers: Thomas D. Stewart, pres.; Frank M. Inman, sec.-treas., and A. E. Hightower, gen. mgr. The Aldora Mills have equipment of 10,000 mule spindles which manufacture 9s to 18s cotton yarns.

Georgia, Columbus. J. F. Pou is reported to be at the head of a project for the erection of a new cotton mill in this city. An option has been secured on suitable land for manufacturing purposes.

Georgia, Columbus. The Muskogee Mfg. Co., the Columbus Mfg. Co., the new Swift Spinning Mills, the Eagle & Phoenix Mill and a number of other manufacturing plants were shut down for a few days on account of the high water; the lower stories of some of the plants being deluged with water.

Maine, Berwick. The New England Woolen Co. has been granted a charter with capital stock of $100,000. O. R Fairfield, of Somersworth, N. H., will be president, E. J. Fairfield also of Somersworth will be treasurer and E. B. Smith, of Berwick, clerk. Their purpose is to manufacture and deal in woolen and cotton goods, shoddy and felt. $300 is paid in.

Maine, Portland. The Richmond Lace Works have been incorporated with capitalization of $250,000 by C. C. Buckman, Boston; J. S. Steele, Worcester and S. C. Perry, Portland.

Maine, Richmond. Reports have been circulated to the effect that the Knapp Spinning Mills would start a weaving department. We are advised that no change in the product of the plant is anticipated and that one loom was installed simply to make certain tests. Combed and carded Egyptian cotton yarns are manufactured.

*Maine, Skowhegan. The Marston Worsted Co. is being prepared for the resumption of operations in full. J. H. Hary of Woonsocket is in charge of the plant.

*Maine, Waterville. Owing to the death of Mr. Frank Chase, treasurer of the Chase Mfg. Co., the property, consisting of modern buildings erected about 5 or 6 years ago, and machinery consisting of 3 sets of cards and 15 Crompton & Knowles looms, are for sale or for lease. The plant and machinery are in excellent condition, having been stopped only a few weeks. There is good water power, sufficient to run the whole plant and suitable for dyeing purposes.

Massachusetts, Fall River. It is expected that the project of erecting a new mill for the Davis Mills will be definitely decided at the meeting of the directors to be held within a few days. The matter has been under consideration at intervals for about a year.

*New Jersey, Raritan. A permanent injunction has been made restraining the stockholders of the Raritan Woolen Mills from increasing the capital stock of the company from $150,000 to $525,000 in accordance with resolutions recently passed by the board of directors.

*New York, Troy. As reported in January there is a movement among prominent collar and shirt manufacturers toward the establishment of a bleaching and finishing plant. At the present time arrangements have not assumed a definite form and it is not certain that a company will be formed and a plant operated. Tentative plans include the formation of a company with capital stock of $500,000, to be known as the Troy Bleaching Co. George Bothamley, an expert bleacher and finisher, has been in correspondence with interested parties.

North Carolina, Charlotte. It is stated that the Charlotte Cotton Mills, 5th and Graham Sts., has decided to liquidate the business. 10,000 spindles and 250 40-inch looms were operated on 37 inch drills and ticking. The plant has been shut down for some time. The company is solvent and the decision to liquidate is voluntary. Machinery and real estate will be disposed of as soon as possible. J. M. Oates is president; D. W. Oates, treasurer, and C. L. Oates, superintendent.

Pennsylvania, Philadelphia. H. C. Ball & Co., proprietors of the Wissahickon Worsted Mills, Main St., Manayunk, have started on a full time schedule. Worsted yarns are manufactured on the Bradford system.

Pennsylvania, Philadelphia. J. & J. Dobson, proprietors of the Falls of Schuylkill Carpet Mills, have resumed a full time schedule after a prolonged period of curtailment.

South Carolina, Union. Hartley L. Lord, who for the past two years has been manager of the Union-Buffalo Mills, Union, S. C., has resigned his position and on June 1 goes to Lancaster, S. C., to be associated with Mr. Leroy Springs, a large capitalist and mill owner, in the management of his extensive interests. He will act as general manager of the following mills controlled by Mr. Springs, making his headquarters in Lancaster: The Eureka Cotton Mills and The Springstein Mills at Chester, S. C.; the Fort Mill Mfg. Co. and Mill Fort Mill Co. of Fort Mill, S. C.; the Lancaster Cotton Mills, Lancaster, S. C. These five mills have a combined equipment of about 125,000 spindles and 3,000 looms, making a wide range of white and colored work. The goods are sold through Deering, Milliken & Co. Mr. Lord went to Union in June, 1906, to become the general manager of the Union-Buffalo Mills property shortly after their reorganization, resigning the agency of the Chicopee Manufacturing Co to accept that position. He has been very successful in the work of building up properties and in his new position will have a still wider field. For the present no general manager has been appointed for his place at Union. Mr. A. W. Smith, president of the company, will give more time to the active management and the superintendents will have charge of the respective plants. Much new machinery has been bought for these mills, including new Draper looms, and will be installed during the summer.

Personals.

John Farrell, overseer of spinning at the Sawyer Mills, Dover, N. H., has severed his connection with that company.

Douglas Anderson has accepted the position as overseer of dyeing for the Auburn Woolen Company, Auburn, N. Y. He was formerly employed at the Sawyer Mills, American Woolen Company, Dover, N. H.

Wm. Paisley, second hand in the dye house at the Salt's Textile Mfg. Company, Norwalk, Conn., has severed his connection with that company.

S. Ohira has accepted a position as assistant dyer at the Rosemont Dyeing Company, Woonsocket, R. I. He comes from East Orange, N. J.

John A. O'Brien has accepted the position as pattern weaver for the Montrose Woolen Company, Woonsocket, R. I. He comes from Gleasondale, Mass.

Fred C. Pohlmann has accepted the position as overseer of dyeing for James & E. H. Wilson, Taconic Mills, Pittsfield, Mass. He was formerly employed at the Middlesex Mills, Lowell, Mass.

James H. Redmond has accepted the position as superintendent of the worsted department for James & E. H. Wilson, Taconic Mills, Pittsfield, Mass. He was formerly employed at the Victor Mfg. Company, Clinton, Mass. He takes up his new duties May 4 and has had a wide experience in the manufacturing of worsted goods, having been employed for a number of years at the Globe Mills, Utica, N. Y.

Wm. Tracy, for twenty years gate man at the Waltham Bleachery & Dye Works, has resigned and has purchased a large farm in South Wolfeboro, N. H.

Wm. L. Brayton, son of the late Hezekiah A. Brayton, late treasurer of the Sagamore Mfg. Company, New Bedford, Mass., has been recommended to the stockholders as a suitable man to fill the position as treasurer.

Thomas Rooney, second hand in the card room at the Nonquit Mills, New Bedford, Mass., has accepted a position as overseer of carding at Utica, N. Y. His successor is Theo. Wood.

Frank Whitaker has accepted a position as section hand at the Griswold Mills, Darby, Pa.

Wm. Estes has accepted the position as overseer of card grinding at the Central Mills Company, Southbridge, Mass.

Harry Balcomb has severed his connection with the Yantic Woolen Company, Yantic, Conn., as overseer of carding. The vacancy has been filled by W. H. Wilcox of Watertown, Mass.

P. D. Wade, for the past 21 years superintendent of the Pelzer Mfg. Company, Pelzer, S. C., has severed his connection with that company.

Wm. Woodcock of Wilton, Me., has accepted a position as overseer of dyeing at Tilton, N. H.

Wm. O. Talbott, superintendent of the dyeing department of the Stott Woolen Company, Stottville, N. Y., has resigned after 21 years of service.

Daniel McIntosh, employed in the dyeing department at the A. D. Gleason Mills, Gleasondale, Mass., had his left arm badly crushed by having it entangled in the cloth while working an extractor.

John Abbott has accepted a position as overseer of finishing at the Soo Woolen Mills, Sault Ste Marie, Mich.

Richard O'Donnell, overseer of dyeing at the Cowan Woolen Mills, Lewiston, Me., has resigned and accepted a similar position with the Morrison Woolen Company, Dexter, Me.

Thos. W. Biddells, overseer of finishing at the Wood Worsted Mills, Lawrence, Mass., has resigned and returned to his home at Potter Hill, R. I.

James Mento has accepted a position as overseer of dyeing for the Strathmore Worsted Mills Concord Junction, Mass. He comes from Bristol, R. I.

James Brown, overseer of dyeing at the Morrison Woolen Company, Dexter, Me., has resigned on account of ill health.

Henry Clapham has accepted the position as superintendent and designer for the Forman Worsted Mills, Howard and Lehigh Ave., Philadelphia, Pa. He was formerly employed at the Griffin Company, Frankford, Phila.

John Kaye has accepted the position as overseer of dyeing for the Oneko Woolen Mills, New Bedford, Mass. He was formerly employed at the Wilton Woolen Company, Wilton, N. H.

B. W. Washburn has accepted the position as overseer of dyeing at the Sawyer Mills, Dover, N. H. He was formerly employed at James and E. H. Wilson's mill, Pittsfield, Mass.

Peter Costello, Jr., has been promoted to the position as overseer of finishing at the Beaver Brook Mills, Collinsville, Mass., to fill the vacancy caused by his brother, Jos. W. Costello, who goes to the Taconic Mills, Pittsfield, Mass.

Robert Yeaman has accepted the position as overseer of dyeing at the Paton Mfg. Company, Sherbrook, Canada.

Chas. E. Tervear, for 30 years agent of the American Hair Cloth Company, Central Falls, R. I., has severed his connection with that company.

Chas. Auel, who has been connected with the mill end of the Faulkner, Page Company, Boston, and a well known woolen manufacturer, has severed his connection with that company and will again identify himself with the management of a wool and worsted mill.

Geo. E. Richardson, employed in the Lancaster Mills, Clinton, Mass., has severed his connection

with that company. He was presented with a Masonic ring by the help in his employ.

Wm. F. McCann will have charge of the weaving department for the new silk mill to be started soon at Providence, R. I. He has been employed for the past year at the Presley Silk Company.

R. P. Gettys, vice-president and treasurer of the Knoxville Woolen Mills, Knoxville, Tenn., has retired from active business. He has been connected with the mill for the past 25 years.

Samuel Jackson, employed at the Osborne Mills, Fall River, Mass., has severed his connection with that company and was presented with a beautiful gold mounted French briar pipe by the help employed under him.

Jos. W. Costello has accepted the position as overseer of finishing for the James & E. H. Wilson, Taconic Mills, Pittsfield, Mass. He was formerly employed as overseer of finishing at the Beaver Brook Mills, Collinsville, Mass.

John Griffin, chief engineer of the American Print Works, Fall River, Mass., has resigned and accepted a similar position at the Richard Borden Mills, same city.

F. W. Treadway, overseer of carding at the Beaver Dam Woolen Mills, Beaver Dam, Wis., has resigned.

H. T. Birkby, overseer of dyeing at the Oneko Mills, New Bedford, Mass., has accepted a position as boss dyer at the Middlesex Mills, Lowell, Mass., succeeding Fred C. Pohlmann.

E. E. Smith has accepted a position as overseer of spinning for the Swift Mfg. Company, Columbus, Ga. He was formerly employed at the Wylie Mills, Chester, S. C.

Jos. Foster has accepted the position as loom fixer at the Saranac Mills, Blackstone, Mass. He was formerly employed at E. Douglas, Mass.

A. S. Winslow has accepted the position as superintendent of the Clinton Cotton Mills, Spartanburg, S. C. He was formerly employed at the Inman Cotton Mills.

A. Tait Hope has accepted a position as manager of the T. H. Taylor Company, Chatham, Ont., Canada. He was formerly employed at Harris & Company, Rockwood, Ont.

Adolph Pfeffer, superintendent for the Fred Faulkner Mill, Stafford Springs, Conn., has severed his connection with that company.

John MacFarlane Moir, treasurer of the Crown Mills and Marcellus Woolen Mills, and Miss Laura Louise Lyon of San Diego, Cal., were married at her home. They will soon take up their residence in Marcellus, N. Y.

John Sullivan has been elected agent of the Taber Mills of New Bedford. He is to act as selling agent also. He was for seven years supt. of the Acushnet Mills in that city and has for the past three years been in the South.

Mr. D. D. Pendleton has been appointed the Pittsburg representative of the Wheeler Condenser & Engineering Co., of Carteret, N. J., and will hereafter handle the sale of Wheeler surface jet and barometer condensers, Wheeler-Volz combined condenser and feed heater, Wheeler-Barnard water cooling towers, Edwards wet vacuum pumps, and other Wheeler specialties, such as dry vacuum pumps, centrifugal pumps, vertical engines, Wheeler vacuum pans, Wheeler multiple effect distilling apparatus, etc., in that territory. Mr. Pendleton has, during the past fifteen years, occupied various positions in the manufacturing, engineering and sales departments of the Westinghouse companies and is well acquainted with the industries of Western Pennsylvania, particularly with the designing and installation of mine power plants. His offices will be located in the Frick annex.

Herbert Lyman, of the well known Lyman family prominently connected with cotton mill interests in New England, and son of Arthur T. Lyman, has been elected treasurer of the Merrimack Manufacturing Co., to succeed the late Charles L. Lovering.

T. W. Meacham, president of the New Process Raw Hide Company, has been elected president of the Chamber of Commerce of Syracuse, N. Y., in which city the New Process Raw Hide Company is located.

Edward Lovering has been elected treasurer of the Massachusetts Mills, Lowell, Mass., and Georgia, succeeding his father, the late Charles L. Lovering.

Harry Balcomb has accepted the position as overseer of carding with A. D. Gleason, Gleasondale, Mass. He was formerly employed at the Yantic Woolen Company, Yantic, Conn.

Michael Lundberg has accepted a position as overseer of dyeing for the Hampton Company, East Hampton, Mass., succeeding Jas. Kershaw, who resigned.

Harry Brooks has been appointed overseer of dressing at the Montrose Woolen Company, Woonsocket, R. I.

F. M. Foster, overseer of carding at the Scottdale Cotton Mills, Scottdale, Ga., has resigned and accepted a position as superintendent and manager of the twine mill at Ingleside, Ga.

W. A. Giles, secretary and treasurer of the Graniteville Mfg. Company, Graniteville, S. C., has been appointed agent of the same mill.

A. L. Burt, overseer of weaving at the Lafayette Cotton Mills, Lafayette, Ga., has resigned and accepted a similar position with the New York Mills, Aragon, Ga.

W. P. Roseberry has been promoted to the position as overseer of carding in the Scottdale Cotton Mills, Scottdale, Ga. He was formerly second hand in this department.

H. M. Hartwell has accepted the position as overseer of weaving at the Acushnet Mills, New Bedford, Mass. He comes from the Dwight Mfg. Company, Chicopee, Mass.

Kai Oa, a young Japanese student was instantly killed in the elevator at the American House, Boston, May 13. It had been his desire to become a

textile designer and he had been studying hard to cherish his ambition.

E. E. Smith has accepted a position as overseer of spinning at the Swift Mfg. Company, Columbus, Ga. He was formerly employed at the Wylie Mills, Chester, S. C.

Robert Blackwood, superintendent of the Marsden Worsted Mills, Skowhegan, Me., has severed his connection with that company. Jacob Harry of the Montrose Worsted Mill, Woonsocket, R. I., is looking after the manufacturing at the Marsden Worsted Mills. Oscar Dietrick has charge during Mr. Harry's absence.

Ronald T. Lyman, treasurer of the Boston Mfg. Company, Waltham, Mass., and also of the Waltham Bleach & Dye Works, has been elected one of the directors of the Waltham Trust Company.

F. B. Manley, superintendent of the Atlantic Mills, Providence, R. I., has severed his connection with that company. His successor is Jos. W. Booth, who has been acting as asst. superintendent of the mills.

John L. Hefferman, formerly connected with the National & Providence Mills, American Woolen Company, has accepted a position as superintendent of the Lymansville Company, Providence, R. I., succeeding Herman Ambach. Mr. Ambach has been employed by this company 11 years.

S. M. Burgess, superintendent of the Oneko Woolen Mills, New Bedford, Mass., has severed his connection with that company.

M. D. Capeless has severed his connection with the Black River Woolen Mills, Ludlow, Vt. The position has been filled by W. S. Nason of Talcottville, Conn.

Herbert C. Pettee, who has for a number of years been with the sales division of the Crocker-Wheeler Company, manufacturers of electric dynamos and motors, and lately Contract Manager, has been elected a Director of the company at the last meeting of the stockholders, by whom he is held in high regard.

Jos. Mullen, of the firm of T. F. Mullen & Company, woolen manufacturers, Stafford Springs, Conn., and Miss Annie Mellon were married in that town by Rev. Felix J. O'Neil.

John R. Scott, of the firm of J. R. & C. W. Scott, woolen manufacturers, Uxbridge, Mass., is seriously ill at his home on Mendon St.

Walter T. Capron, who was formerly employed as assistant designer at the C. A. Root Company, Uxbridge, Mass., has accepted a position at the French River Textile Company, Mechanicsville, Conn.

John T. Lyons has accepted the position as overseer of finishing at the Beaver Brook Mills, American Woolen Company, Collinsville, Mass., succeeding Peter Costello, Jr. He was formerly employed at the Clinton Mills, Norwich, Conn.

Frank Barrett has accepted the position at the Rhode Island Worsted Company, Stafford Springs, Conn., in the pattern department.

Wilfred Robertshaw has accepted a position as overseer of drawing for the Dearnley Worsted Spinning Company, Philadelphia, Pa.

Walter Hobbs, designer for the Angus Park Mfg. Company, E. Glastonbury, Conn., has severed his connection with that company.

Louis A. Anderson, who was formerly agent of the River Spinning Company, Woonsocket, R. I., has been appointed superintendent of the Oneko Woolen Mills, operated by Holden, Leonard & Company, New Bedford, Mass.

James Reynold, designer at the C. L. Blanding Mfg. Company, Providence, R. I., has severed his connection with that company. He was formerly assistant superintendent at the French River Textile Company, Mechanicsville, Conn.

Wm. J. McGovern has resigned his position at the Saundersdale Works, Southbridge, Mass., to accept the superintendency of the bleaching and finishing department of the New York Mills, New York Mills, N. Y.

Henry Maloney, overseer of finishing at the Faulkner Mfg. Company, North Billerica, Mass., has severed his connection with that company after 15 years of service.

Peter Costello, Sr., has severed his connection with the Morrison Woolen Company, Dexter, Me., as overseer of finishing.

Harry Taylor has accepted the position as overseer of dyeing at the Merrimack Hat Company, Amesbury, Mass. He comes from Brooklyn, N. Y.

W. J. Martin has accepted a position as boss finisher with the Blue Ridge Woolen Mills, Basic City, Va.

John McGinn, overseer of finishing at the Worcester Woolen Company, Worcester, Mass., has resigned and accepted a similar position with the Daniels' Worsted Mills, Worcester, Mass.

Wilkinson Crossley has severed his connection as overseer of dyeing at the Belle Vue Mills, Clinton, Mass.

Thomas Kirkman of Williamstown, Mass., has accepted a position with the American Bag Company, at Memphis, Tenn. He is to have a position in the bleaching department.

Wm. L. Mabon, second hand in the weaving department of the Hamilton Mfg. Company, Lowell, Mass., has severed his connection with that company after 30 years of service. He was presented with a purse of gold by the help in the weaving department.

Geo. Einstein of the Raritan Woolen Mills, Raritan, N. J., has associated himself with Siegfried Arnold under the title of Arnold & Einstein, importers of dress goods, with office at 63 Leonard St., New York.

W. R. McConachie, who held the position as boss dyer for the Belle Vue Mills, Clinton, Mass., has again re-entered their employ, succeeding Wilkinson Crossley.

Thomas H. Kenney has been appointed over-

seer of finishing at the Oneko Woolen Mills, New Bedford, Mass. He was formerly engaged at the Stanley Woolen Company, Uxbridge, Mass., but later with W. J. Dickey Woolen Company, Oella, Md.

Henry H. Tilton was awarded a verdict of $3,500 against the Hudson River Woolen Mills Company of Newburgh, N. Y., for injuries received by being caught between the cylinder and tumbler in one of the cards, Aug. 7, 1907. Bert Haley, second hand in the card room, was given a verdict of $2.000 against the same company.

Arthur R. Layman has accepted the position as overseer of spinning at the Sawyer Mills, American Woolen Company, Dover, N. H. He was formerly employed at the Rochester Woolen Company, Rochester, N. H.

Clark Faulkner has accepted the position as overseer of carding at the Verd Mont Mills, Ludlow, Vt. He was formerly employed at South Royalston, Mass.

T. H. Richardson, formerly of Dover, N. H., has accepted a position as overseer of weaving in a cotton mill in Providence, R. I.

James Sherman, overseer of finishing at James & E. H. Wilson, Taconic Mills, Pittsfield, Mass., has severed his connection with that company after 8 years of service.

John Moore has resigned his position as overseer of dyeing at the Kent Mfg. Company, Centreville, R. I., succeeding Mr. Cary of Woonsocket, R. I.

John F. Drummond, overseer of dyeing at the Campbell Mfg. Company, Sangerville, Me., has severed his connection with that company. He was formerly employed at the Taylor Mfg. Company, Hope Valley, R. I.

Geo. Carey has been appointed overseer of dyeing at the Kent Mfg. Company, Centreville, R. I.

John Mara has accepted a position as boss dyer for W. H. Kauffman, Athol, Mass.

W. P. Barnes, general manager of the Hope Mills Mfg. Company, Hope Mills, N. C., has resigned and returned to Griffin, Ga.

Thomas J. Sexton, overseer of carding at the Greenville Woolen Mills, Greenville, R. I., and Miss Anna Kelly were married, April 25, by Rev. C. M. Little at Georgiaville, R. I. The reception was held in the evening at the home of the bride's brother. During the evening Mr. and Mrs. Sexton were presented with many beautiful and costly presents.

P. H. Tobin has re-entered the employ of the Morrison Woolen Company, Dexter, Me., as overseer of finishing. This is the second time Mr. Tobin has been finisher at this mill, having resigned there some time ago to accept a similar position at Cherry Valley, Mass.

N. E. Deveraux has been elected president of the Skenandoa Cotton Company, Utica, N. Y., at a meeting held by the directors recently; F. G. Wood, vice pres.; W. S. Doolittle, sec. and F. P. Fitsimmons, treas.

Thomas Sutcliffe, overseer of weaving at the Lorraine Mfg. Company, Westerly, R. I., for the past twenty years has severed his connection with that concern He was presented with a handsome gold watch and chain by the help employed in his department.

W. T. Joyce, assistant superintendent at the Clyde Bleachery & Print Works, River Point, R. I., has accepted a position as superintendent of the Southbridge Printing Company, Southbridge, Mass.

Edward Elsner has accepted the position as designer for the Fern Rock Woolen Mills, Philadelphia, Pa. He was formerly employed as designer at the Saugus Mfg. Company, Saugus, Mass.

Harry Haigh has accepted the position as overseer of dyeing at the Assawaga Company, Dayville, Conn. He was formerly employed at the Saugus Mfg. Company, Saugus, Mass.

James Latham has accepted a position as overseer of the engraving and sketching department at the Windsor Print Works, succeeding John Emmott, who resigned.

Wm. N. Henry, formerly overseer in the axminster weaving department at the Hartford Carpet Corporation, has resigned and accepted a similar position with the Roxbury Carpet Company, Roxbury, Mass.

Geo. Whitaker has accepted the position as overseer of finishing at the Beaver Dam Woolen Mills, Beaver Dam, Wis.

Louis O. Demars has accepted the position as second hand in the dye house at the Worcester Woolen Company, Worcester, Mass. He was formerly employed at the Franklin Mills, Franklin, N. H.

E. C. Westbrooke has accepted the position as designer for the Rhode Island Worsted Company, Stafford Springs, Conn. He was formerly employed at Schaghticoke, N. Y.

A. F. Foster has accepted a position as overseer of spinning at the Pine Tree Worsted Company, Danielson, Conn. He succeeds L. H. Corey.

H. P. Mallison, superintendent for Chas. Porter & Sons, manufacturers of men's wear, Howard and Norris Sts., Philadelphia, has severed his connection with that company and is now in a similar position with the May Mfg. Company, Ashton Mills, Pa., succeeding S. J. Greer, who was recently stricken with apoplexy and compelled to retire.

B. D. Connell, formerly overseer of spinning at Proctorsville, Vt., is holding a temporary position as bag master at Bellows Falls, Vt.

Ceo. Smethurst, overseer of spinning at the Plainfield Woolen Company, Central Village, Conn., has severed his connection with that company on account of his health. He will take a much needed rest before engaging elsewhere.

E. T. Switzer, designer at the Hope Mills Mfg. Company, Hope Mills, N. C., has resigned.

John F. Mahoney, for the past three years at the Holt-Morgan Mills, Lafayetteville, has accepted a position as overseer of weaving at the Hope Mills Mfg. Company, Hope Mills, N. C.

W. E. Poag, overseer of carding and spinning at Roanoke Rapids, N. C., has accepted a similar position with the German American Mills, Draper, N. C.

W. D. Ingle has accepted a position as overseer of weaving, spooling and warping at the Fulton Bag & Cotton Mills, Atlanta, Ga.

H. B. Massey has accepted a position as overseer of carding at the No. 1 Mill at Lando, S. C.

W. S. Phillips is overseer of weaving at the Aragon Mills, Aragon, Ga.

Frank Prentis has accepted a position as designer for the Central Worsted Company, Central Village, Conn.

Albert R. Heritage has accepted a position as superintendent and designer for the Laurel Mills Mfg. Company, Roswell, Ga. He was formerly employed at Enfield, Mass., and previous to that time was manager of the Carpenter Woolen Mills Company, Clifton Forge, Va.

Thomas Brooks, overseer of spinning at the Oakland Mfg. Company, Reisertown, Md., has severed his connection with that company after four years of service.

Robert S. McDougall has been appointed assistant manager of the Apponaug plant of the U. S. Finishing Company, Apponaug, R. I.

John Emmott, overseer of the engraving department of the Windsor Print Works, North Adams, Mass., has severed his connection with that company after 47 years of continuous service. James Latham, for twenty years connected with the engraving department, is to succeed Mr. Emmott as overseer.

Thomas Curtis, overseer of carding at the Danielson Cotton Co., Danielson, Conn., has severed his connection with that company and accepted a similar one with the Lorraine Mfg. Company, Pawtucket, R. I.

R. R. O'Donnell, overseer of the dyeing department at the Morrison Woolen Company, Dexter, Me., has severed his connection with that company.

J. S. Dudley has accepted the position as overseer of spinning at the Bernon Mills, Georgiaville, R. I., succeeding Thos. H. Dugal.

C. D. Risley has accepted a position as overseer of finishing at the Belle Vue Mills, Clinton, Mass., succeeding Mr. Rodger.

James Fraser has accepted a position as overseer of dyeing at the Morrison Woolen Company, Dexter, Me.

Wm. M. Wood, president of the American Woolen Company, entertained a number of the officials and overseers connected with the Washington and Wood Worsted Mills at his summer residence in Andover Saturday, May 23. There were about 150 present.

Louis W. Emerson, president of the Warrensburg Woolen Company, Warrensburg, N. Y., and a director of the Empire Shirt Company, has been elected president of the Emerson National Bank.

DEATHS.

Charles Cooper, Bennington, Vt., one of the best known men in the knitting industry, died suddenly at his summer home at Round Lake, New York, May 2. He was born in Nottingham, Eng., 73 years ago, and came to this country at the age of 12, and has been connected with the knitting trade for many years. As an inventor and builder of knitting machinery he was one of the pioneers and leaders in upbuilding the mechanical side of the knitting trade, probably doing as much as any man for the development of a distinct type of American knitting machinery. The Cooper Manufacturing Company, Bennington, manufactured knit goods on the machinery of his patents and is one of the largest industries in the state. Mr. Cooper was president of this concern at the time of his death. He took great interest in his summer home at Round Lake, and was a trustee of th Round Lake Association controlling adjacent property. He is survived by his widow, his son, Alexander J. Cooper of Bennington, and his daughter, Mrs. G. F. Stoddard of New York.

Davis Jones, who has been superintendent of the Atlas Underwear Company, Piqua, Ohio, for the past seven years, died at his home in that city.

Charles L. Lovering, treasurer of the Merrimac Mfg. Co., died at his home in Taunton at the age of 75. He had been in ill health for some time previous to his death. He was one of the most prominent of New England treasurers, and the Lovering family has been for years identified with the cotton industry. Besides the Merrimac, he was treasurer of the Massachusetts Cotton Mills, Lowell, president and director of the American Felt Co., director of the Elizabeth Poole Co. and the Whittenten Mfg. Co., Taunton, and of the Gosnold Mills at New Bedford, besides being director and officer of a number of other business organizations. His judgment as a cotton buyer was highly regarded. He leaves two sons, Edward, who is treasurer and manager of the Whittenten Mills, and William M., head of the Taunton Dye Mills & Bleachery. William C. Lovering, the Congressman, is a brother.

William M. Young died Wednesday, May 20. Mr. Young has been identified with the textile industry in Philadelphia for many years, conducting a plant for the manufacture of spindle banding, ropes, etc., on Frankford Ave., below Frankford Junction and several years ago in partnership with George Weinmann started a plant under the name of the Kensington Machine Co., for the building and repairing of textile machinery, on Mascher St., below Lehigh Ave., with which he was identified up to the time of his death. The funeral was held at his late residence, 3647 Emerald St., the interment being made at Oakland Cemetery. Mr. Young leaves a wife and one son, John B. Young, who is also a prominent textile manufacturer of this city.

Jos. Stone, a retired manufacturer of worsted goods, who was connected with the Pacific Mills of Lawrence, Mass., during the greater part of his business career, with office at 53 State St., died at

his home, 125 Townsend St., Roxbury, Mass., May 24. He had been in failing health for about six months. He was born in Charlestown, Mass., sixty years ago.

Frank Chase, who organized the Chase Woolen Company, Waterville, Me., and a prominent citizen, died at his home on Western Ave., at the age of 61 years. Death was due to Bright's disease.

Othliel De Forest, secretary of the Somerset Silk Company, with office at 282 Broome St., New York City, died in his office April 28 while talking with his manager and sales agent. During the conversation he complained of feeling ill and died before a doctor could be summoned.

James Stott, for 37 years superintendent of the Talbot Mills at North Billerica, Mass., and a resident of that town for more than 50 years, died at his home, aged 82 years. He was the first superintendent of the Talbot Mills, and was closely connected with its growth and success up to the time of his resignation in 1894.

Ferguson N. Barber died at his home in Rock Hill, S. C., at the age of 76 years. He was one of the first to manufacture cotton goods in that section.

John Dumas, employed in the finishing department at the Dunn Worsted Mill, Woonsocket, R. I., was instantly killed, being caught in one of the running gears of the fulling machine. He was 50 years of age and leaves a family.

Horatio M. Howard of Byfield, Mass., died at his home on Central St. of heart trouble. Mr. Howard was for the past 80 years connected with the woolen business.

Wm. H. Baker, for more than 60 years a resident of Williamsburg, Pa., died at his home, 221 So. 9th St. He was born in Brooklyn, N. Y., 76 years ago. He was at one time vice-president of the J. W. Streeton Company, silk manufacturers. He is survived by his wife and four sons.

Wm. J. Kennedy of the firm of W. J. Kennedy & Sons, manufacturers of picked, carded and garnetted stock, of Broadalbin, N. Y., died at his home in that town at the age of 55 years. Some years ago when the Broadalbin Knitting Company was formed, he became the general superintendent and held this position until the plant burned in 1905.

Geo. H. Gilbert died at his home in Winchester, Mass., April 14. He had been in ill health for several years. Mr. Gilbert was born in North Andover, April 24, 1841, and educated in the Ware public schools, the Monson Academy and at the Williston Seminary at Easthampton. At the age of 20, he entered the business conducted by his father as sales agent in New York and at 25, he was made a partner. With his uncle he established the commission house of Farnham & Gilbert Company. He was the son of the late Hon. Geo. H. Gilbert, who established extensive woolen factories at Ware and Gilbertville, known as the Geo. H. Gilbert Mfg. Company. He was tendered a unanimous nomination of the Republican party for the New York Senate, but declined for business reasons. He was a charter member of the Union League Club of New York, also a member of the Park Street Church of Boston. He leaves two brothers, J. H. Greenville Gilbert and Edward H. Gilbert and one sister, Mrs. James H. Hinsdale, of Pittsfield, Mass. Mr. Gilbert never married.

Henry Gray one of the directors of the Clifton Hosiery Company the Winsted Hosiery Company and the New England Kniting Company, died at his home at Winsted, Conn., May 17th. He was born in Salisbury, Conn., April 5, 1834. Was also president of the Hurlburt National Bank.

Geo. H. Bisby, who was connected with the firm of A. L. Woodruff & Company, Hamilton, Ont., Canada, wholesale wool dealers and also the firm of Long & Bisby, died at his home in that city, May 12, at the age of 72 years. He was also interested in the Farr Alpaca Mills, Holyoke, Mass.

Frank Russell, a prominent resident of Pittsfield, Mass., and formerly associated with Lemuel Pomeroy & Sons, woolen manufacturers and Brown & Russell, knit goods manufacturers, died at his home in Pittsfield at the age of 50 years. He is survived by his wife and two sons.

James B. Ward, senior member of the firm of James B. Ward & Bro., proprietors of the Boylston Mills, manufacturers of Turkish towels and bleachers of cotton fabrics at Howard St. and Lehigh Ave., Philadelphia, died May 22 and was buried from his late home, 2362 No. Park St., on May 26.

Robert Cumming, for many years prominent in the thread industry, died at his home, 317 Mt. Prospect Ave., Newark, N. J., of heart disease after an illness of several weeks. He was born in Scotland 65 years ago and was for some time agent of the Royal Bank of Scotland at Kilmarnock. He came to this country in 1880 and immediately became connected with Geo. A. Clark & Bros. He retired ten years ago and was also director of the Marshall Linen Thread Company. He is survived by his wife, a married daughter and three sons.

Benjamin Frank Taylor, an employe at the Peace Dale Mfg. Company, Peace Dale, R. I., was instantly killed April 18 while oiling a cable pulley. The rope broke and in winding around the fly wheel caused it to break, a fragment hitting Mr. Taylor and throwing him out of a window to the ground, a distance of 40 feet.

Geo. M. Jeffrey, head of the designing department of the Pacific Mills, 34 Thomas St., died at the age of 65 years. He is survived by his wife and one son.

James Monroe Chaffee of Staffordville, Conn., died at his home in that town at the age of 60 years. He was a wool sorter by trade and considered an expert in that line.

E. H. Blake, wool buyer connected with the firm of Christy & Wise, San Francisco, Cal., died at his home in Pendleton, Ore.

Jos. T. Smith, who operated a worsted spinning plant at Westmoreland and Emerland Sts., died at his home, 1911 E. Allegheny Ave., at the age of 54 years.

Manuel Sylvia, foreman at the Acushnet Mills, New Bedford, Mass., died at St. Luke Hospital of lockjaw, May 20. He stepped on a nail some time ago and tetanus soon developed.

New Publications.

[Any work noticed under this head can be obtained through the office of this journal.]

Chemistry of the Oil Industry (Chemie der gesamten Oelindustrie); by F. R. Rossmaessler; 122 pages, 5 by 7 1/2; A. Hartleben, Vienna and Leipsic; price $1.25.

The author's object in writing this book was to combine theory with practice, and supply what he believes to be a deficiency in the literature of oils, in which factory processes and practice have claimed an undue amount of attention. The subject is treated under three heads: Animal and Vegetable Oils and Fats 1, Mineral Oils and Fats, and Essential Oils. The text is in German.

The Practice of Power Weaving (Die Praxis der Mechanischen Weberei); by Hermann Dornig, 124 pages, 6 1/2 by 9; A. Hartleben's Verlag, Wein, Austria. Price $2.00.

The author has included in the second edition of this work much material suggested by inquiries from correspondents in regard to points not covered in the first edition. The text, which has been carefully revised, is in German.

The Structure of the Cotton Fiber; by F. H. Bowman; Macmillan & Co., London and New York.

For nearly thirty years the name of Bowman has been identified with technical knowledge of textile fibers. This has been due not only to the fact that Prof. Bowman was the first author to present a detailed study of the subject to the trade, but also because his work was in a high degree painstaking and scientific. His works have been out of print for many years, and it is a reason for congratulation that he has been led to issue revised editions, placing the results of his labors within reach of the new generation that has come on the scene since his first editions appeared. The present volume, dealing with the cotton fiber, is divided into the following sections: Classification of Fibers; Method of Research; History, Sources and Botany of Cotton; Origin and Development of the Cotton Fiber; Chemistry; Strength and Variation; Testing; Theory of Dyeing; Relation of the Cotton Fiber to Dyeing; Analysis and Detection of Fibers; Glossary.

Business Literature.

Schubert & Salzer Machine Works of Chemnitz, Germany.

This well known firm of machine builders have signalized the 25th anniversary of their establishment by issuing a very attractive catalogue containing illustrations of the various types of flat and circular knitting machines, sewing machines, spoolers, warp knitting machines, cotton combers, lace and embroidery machines, machine tools and of cash registers. The catalogue also contains excellent photographs of the head officials of the firm and of the corps of overseers, salesmen and technical experts.

The American agent is Otto Walther, 507 Bourse, Philadelphia, Pa.

Year Book of the Eonomizer, Catalogue 106; The Green Fuel Economizer Co., Matteawan, N. Y.

This is a pamphlet of 158 pages in which the work of the Green fuel economizer is described. It contains illustrations and charts, giving results obtained from steam plants in many parts of the country.

"Stitches." Merrow Machine Company, Hartford, Conn.

This is an attractive little publication devoted to the processes, products and devices made by the above company, and will be issued semi-occasionally for the purposes of describing the various machines which they build and the particular purposes for which they are adapted. The May issue contains a description of their Style No. 60 machine, as well as the portraits of a number of their outside representatives who call upon the trade and who are in charge of the different branches.

Vertical Self-Oiling Steam Engines; American Blower Co., Detroit, Mich.

An illustrated catalogue of 64 pages describing types A and E of the vertical engines built by this company.

The Turbo-Humidifier: The G. M. Parks Co., 453 Main St., Fitchburg, Mass.

It is seldom that a more attractive business booklet comes to hand. It is not exactly a catalogue but an attractive story and description of the Turbo-Humidifier, illustrated with two-color, half-tone, inserted prints, showing in the clearest manner the working of the apparatus. There is also a chapter on the general subject of humidity. Every mill man interested in Air Conditioning should have a copy.

Hydro Extractors: The Tolhurst Machine Works, Troy N. Y.

This new catalogue illustrates the line of hydro extractors for mill use built by this company. The self balancing feature is one of the strong points of the Tolhurst extractors. Different types of machines are built for different purposes. Some novel features which attract attention are the wooden case extractors designed for carbonizing and wherever strong acids are used. The wooden case being easily lifted above the basket makes it easy to frequently coat the basket with acid resistant. They are made for both belt and direct engine drive.

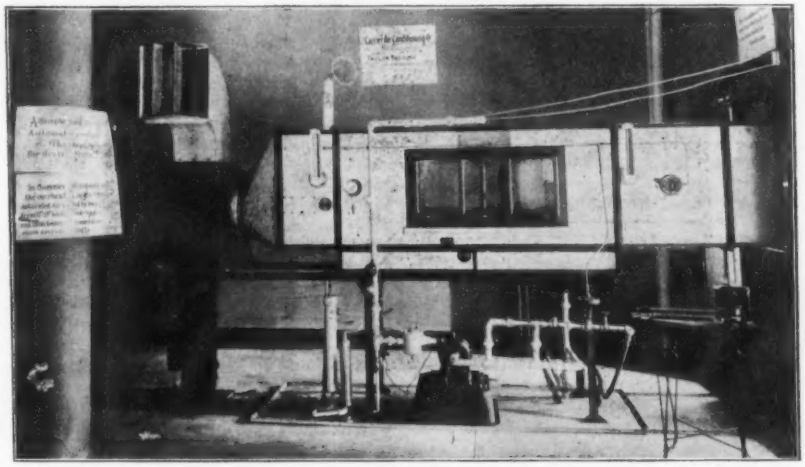
Another type is arranged with bottom discharge. For some purposes this method of unloading the basket is very desirable.

Electric motor driven extractors are now included in the Tolhurst line. One of the advantages of the motor driven extractor is the rapidity with which the basket attains full speed.

A sectional view of the extractor with parts lettered and a list of the parts will be found very convenient in ordering repairs. The list of textile mills using the Tolhurst extractors reads almost like a mill directory and includes a very large number of representative establishments.

Exhibit of the Carrier Air Conditioning Company.

A feature of the Richmond Convention which attracted much attention was the working exhibit of the Carrier air conditioning system, Taylor Bldg., New York, showing the automatic regulation and supply of air of a required degree of humidity and temperature. This system was described at length in a previous issue of the Textile World Record,



THE CARRIER EXHIBIT AT RICHMOND.

but many manufacturers who had not had the opportunity of personally examining the actual operation of the system were interested in the exhibit which was held in a room adjoining the convention hall. Four representatives of the company, including Messrs. Carrier and Lyle, were in attendance.

American Blower Co. Purchases Foundry.

The American Blower Company, Detroit, Mich., announce that they have purchased the foundry formerly operated by the Northwestern Foundry and Supply Co. of Detroit, who were manufacturers of cast iron soil pipe and fittings, plumbers' specialties, etc. They expect to equip the new space acquired by this purchase for the manufacture of blower, exhaust fan, engine and heater castings and desire to dispose of all the patterns and foundry equipment of the Northwestern Company, and also a large stock of finished pipe fitting, bell traps and other finished products. In order to make a quick sale the equipment and material are offered at a very low figure. When present plans are carried out the American Company's facilities for manufacturing power, heating, ventilating, drying and mechanical draft appliance will be greatly improved.

A new edition of their engine catalogue, No. 232, has just been issued and contains, in addition to matter previously published, information regarding new sizes not previously listed.

Getting Ready for Canadian Business.

One of the signs of returning confidence in the business situation is the organization of the Canadian Crocker-Wheeler Company, Ltd., for the manufacture and sale in Canada of the well and favorably known Crocker-Wheeler apparatus.

The Crocker-Wheeler Company, Ampere, N. J., manufactures all types of direct current and alternating current motors and generators, power transformers, motor generator sets, frequency changers, etc., some of the best known lines being direct current motors for special purposes, such as machine tool and printing press drive, and textile mill work.

F. E. Lovell, president of the new company, is a member of the old established lumbering firm of H. Lovell & Sons, of Coaticocke, Que., who have extensive interests in mills and timber limits throughout the Province of Quebec.

Russell A. Stinson, vice-president, and F. Jno. Bell, secretary-treasurer, have been identified with the manufacturing, construction, and sales ends of the electrical trade in Canada for the past fifteen years, and are particularly well known in Montreal, where the head office of the company has recently been opened in the Street Railway chambers, Place d'Armes Hill.

Belt Driven Fans for Work Tables.

An ingenious warm weather fan is being put on the market by George W. Weiss, 374 Canal St., New York. It is especially adapted for power tables in work rooms and for sewing machines. The same belt that drives the machine on the table drives the fan which is easily attached to the table and does not take up any useful room. It can be adjusted at any angle and is a great comfort to the operatives in the warm weather. The price is very reasonable and we understand that large sales have been made.

The Technical Publicity Association.

The new officers of this association elected at its last annual meeting are as follows: President, C. S. Redfield; Adv. Mgr., Yale & Towne Mfg. Co., N. Y.; First Vice President, Rodman Gilder; Publicity Mgr., Crocker-Wheeler Company, Ampere, N. J.; Second Vice President, C. N. Manfred; Mgr. Adv. Dept., H. W. Johns-Manville Co., N. Y.; Secretary, H. H. Kress; Publicity Dept., A. S. Cameron Steam Pump Wks., N. Y.; Treasurer, H. M. Davis; Adv. Mgr., Sprague Electric Co., N. Y.; Members of Executive Committee, F. H. Gale, Chg. of Adv., General Electric Co., Schenectady, N. Y.; and C. W. Beaver, Special Representative, Yale & Towne Mfg. Co., N. Y.

Twenty new members have joined the association since the previous annual meeting.

"Gandy" Belting.

The United States Court has held that the Gandy Belting Company of Baltimore is the sole and exclusive owner in the United States in the well known trade mark used by that company upon red stitched cotton belting. They are the originators of this brand, and the "Gandy" belting is stamped every ten feet with the words "Genuine Gandy Belt."

Combination in the Color Industry.

The managers of the Hoechster Farwerke, Hoechster a/M announces an increase in the capital stock of 10 1/2 million marks. This increase is to pay for a controlling interest in the firm of Kalle & Company. The annual statement of the Hoechster Farwerke shows a net profit of 11,098,770 marks after charging off 2,651,720 marks. A dividend of 30 per cent. has been declared.—Leipziger Monatschrift fuer Textil-Industrie.

H. W. Johns-Manville Company Open a Detroit Office.

A new branch office in Detroit has been opened at 72 Jefferson Ave., under the management of Willard K. Bush, who has been connected with the Milwaukee branch of the company for a number of years. A complete stock of goods will be carried at the Detroit branch.

Removal.

The Nanz Clock Company, manufacturers of watchmen's time detectors, have removed their office, salesroom and repair shops to 178 Fulton St. New York.

Walter B. Snow, publicity engineer, has recently increased his facilities by removal to larger quarters at 170 Summer St., Boston, Mass., and the establishment of an addressing and mailing department in connection with which select mailing lists will be maintained for the special use of his clients.

A Talk on Textile Arithmetic.

By Samuel S. Dale, before the Lawrence Textile School, Friday May 25, 1908.

What makes the Lawrence Textile School so full of promise is the fact that it originated not in the desire to give instruction, but in a desire to receive it, a hunger and a thirst for technical knowledge of the textile industry. And what will make this school of the greatest use is the maintenance of the broad principle underlying that hunger and thirst, the love of truth for truth's sake. To the man, woman or child imbued with that desire it makes no difference how the truth is found as long as it is found. There is no narrow prejudice as to methods. It makes no difference whether the truth is found by one's own hard experience or is obtained by the most highly developed of modern educational methods; whether it is found by accident or imparted deliberately by an instructor wearing a long string of degrees; whether it comes down from the heights or up from the depths. The only test is the question: "Is it the truth?" It is in this spirit that we will talk tonight for a short time of textile calculations, which probably has as extensive a bearing on textile processes as any subject that will engage your attention.

THE STRAIGHT LINE METHOD.

Now instead of devoting the hour at our disposal tonight to the necessarily dry details of mill arithmetic, let us consider some of the general features of the subject, its importance and particularly the best method of combining a clear understanding of the processes of calculation with the greatest degree of accuracy and speed. The shortest distance between two points is a straight line, and in the absence of obstructions the easiest way is a straight line. Moreover the straight path is the one best remembered after it has been traveled. It is the straight line method that I want to commend to you in making textile calculations. We are especially favored in adopting the straight line process because of the small number of standards of weight and measure with which textile work is carried on in this country. The people of some other countries are not so highly favored in this respect. That, however, is another story. It is our business to calculate by the standards used in the mills around us in which so many of us earn a living. Here textile operations are with a few unimportant exceptions carried on by only six standards, two for length and four for weight: Yard, inch, pound, ounce, dram, and grain.

SIMPLICITY OF AMERICAN STANDARDS.

Calculations for textile materials in process of manufacture relate principally to length and weight, slightly to area and practically not at all to volume. These are the conditions that simplify calculations to so great a degree in American mills. Perhaps the greatest complication results from the standards of yarn sizes, which are based on the relation between weight and length. Here again we are especially favored because with one exception each branch of the American textile industry has its distinctive standard:

Cotton ..... 840 yards to the pound
Worsted ..... 560 yards to the pound
Woolen .....1,600 yards to the pound
Linen ..... 300 yards to the pound
Silk ..... drams per 1,000 yards

The exception is the use of the linen count for woolen yarn in the Philadelphia district. The linen industry is of relatively minor importance. The worsted count is based on a length of 560 yards, which is exactly two-thirds of the cotton hank (840 yards). The two principal systems of yarn numbering are the cotton of 840 yards per pound and the woolen run of 1,600 yards per pound. Because of their extensive use and of certain useful relations they bear to each other and to textile standards in general we will find it advantageous to use these two systems, the cotton and the run, as the basis for our system of calculations involving yarn sizes. Either the cotton count or the run is easily reduced to equivalents by any of the other three standards. For example: No. 1 cotton measures 840 yards to the pound. This length is equal to one and one-half times the worsted hank. No. 1 cotton is, consequently, equal to No. 1 1/2 worsted. All we need do to reduce the cotton count to a worsted basis is to increase the former by one-half. Thus:

No. 20 cotton = ... No. 30 worsted
No. 36 cotton = ... No. 54 worsted

The reverse of this operation is a reduction by one-third. Thus:

No. 30 worsted = ... No. 20 cotton
No. 48 worsted = ... No. 32 cotton

The cotton hank is 2.8 times the linen hank. Accordingly a reduction from a cotton to a linen basis consists in multiplying by 2.8. Thus:

No. 10 cotton = ... No. 28 linen
No. 30 cotton = ... No. 84 linen

The run of 1,600 yards is nearly twice the length of the cotton hank, consequently the run count is nearly one-half the cotton count. This rough reduction serves for many purposes in the mill. For calculations, however, greater accuracy is required. The cotton hank of 840 yards is equal to .525 of the woolen run.

No. 1 cotton = ... .525 run
No. 10 cotton = ... 5 1/4 run
No. 100 cotton = ... 52 1/2 run

The exact run equivalent of the cotton count is in most cases readily found by a mental calculation, because it is 5 per cent. or 1/20th more than half of the cotton number. Thus:

No. 10 cotton = ... 5
Add 1/20 ..... .25
No. runs 5.25

No. 40 cotton = ... 20
Add 1/20 1
No. runs 21

No. 36 cotton = ... 18
Add 1/20 9
No. runs 18.9

A MENTAL PROCESS.

This mental operation is simply two successive halvings and a division by 10. Thus in the last reduction we divide 36 by 2, and then 18 by 2, moving the decimal point in the last quotient one place to the left, then adding the two quotients together.

The convenience of the run system is due to the fact that 1600 yards to the pound is equivalent to 100 yards to the ounce. A 4 run yarn measures 4 × 1600 yards per pound or 4 × 100 yards per ounce. A 5 run yarn thus measures 500 yards to the ounce; a 6 run, 600 yards, etc. If then we know the run size of a yarn the weight in ounces is found by a single division. A warp with 3000 ends has 3000 yards of yarn per yard of warp. If the yarn is 4 run the weight of a yard of warp is 3000 ÷ 400 = 7 1/2 ounces. The simplicity of this process makes it advisable to reduce other counts to the run basis before calculating the weight from the length and size of yarn.

The basis of the cotton count offers manifold advantages. It is equal to 840 yards per pound, 52 1/2 yards per ounce or 4.32 inches per grain. The 840 yards is divisible by 2, 3, 4, 5, 6, 7, 8 and 10, or every number from 2 to 10 inclusive except 9. This enables the hank to be divided into lengths bearing convenient relations to our weights and measures. Take for example one-seventh of the cotton hank which is 120 yards. The cotton count, indicating the number of 840-yard lengths in 7000 grains, likewise indicates the number of 120-yard lengths in 1000 grains (1/7 lb.) If then we know the weight of 120 yards of a given yarn, we can find the cotton count (120-yard lengths per 7000 grains) by dividing 1000 by the number of grains.

Example. Find cotton count of yarn of which 120 yards weigh 25 grains. 1000 (grains) ÷ 25 (grains) = 40, Cotton No. This in turn is equal to No. 60 worsted, or 21 runs.

NATURAL SELECTION.

The simplicity of textile calculations in American mills is the more remarkable because our standards of weight and measure on which they are based have apparently been adopted by chance. English speaking people have been left to use those standards they found most convenient. And as a result we find that textile operations are based on a very few convenient standards, which have been in use from the first English settlements on the Western Hemisphere and from time immemorial in the old world. The people have adopted the most convenient standards for their work, and the government has confined itself to keeping those standards uniform. That reminds me of an interesting incident, which it may not be out of place to recall at this time.

RECORDS BY TALLY-STICKS.

In 1834 both Houses of Parliament at London were destroyed by a fire, and with them, all

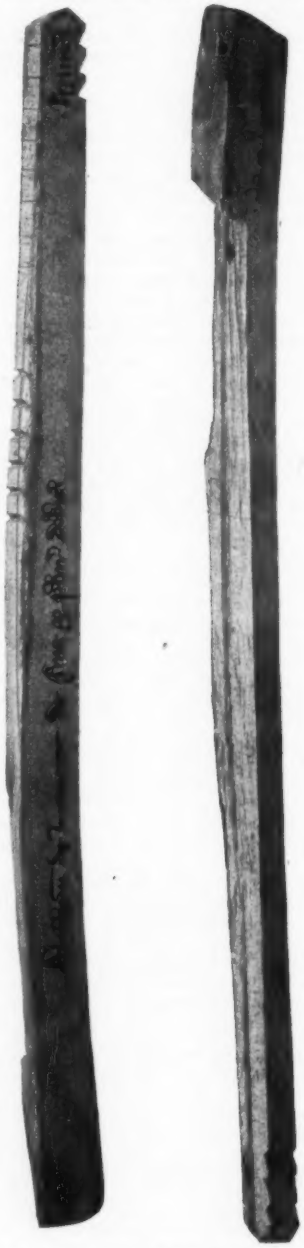
the basic standards of weight and measure for the British Empire. That fire was caused by burning a lot of old tally sticks in the furnace of the House of Lords. Many of you may ask, as I did when I fist heard of this event: "What is a tally stick?" Before writing on paper had come into general use, the accounts of the British Exchequer with depositors were kept by tally sticks. When a person deposited money with that institution the clerk cut notches in a stick, which was about 8 inches long and 3/8 inch square. There was a deep notch for each pound sterling, a small notch for each shilling, and a scratch or slit for each penny of the amount deposited. The depositor's name and the date were then written on two sides of the stick.

The tally clerk next sawed the stick half in two at a point a short distance from the end, and then split it lengthwise into two pieces, one longer than the other and having a butt at one end. The two pieces had each the same number of notches and each bore the date of the deposit and the name of the depositor. The smaller piece was given to the depositor as a certificate of the deposit; the larger piece was retained in the Exchequer as a record of the transaction. If a piece of paper is torn in two we have two pieces that match when brought together, but no other piece can ever be torn to match either of the first two. And so with the tally-sticks. No other stick could ever be split to match either the one held by the depositor or the one in the Exchequer. Counterfeiting was impossible.

UNCLAIMED DEPOSITS.

When the depositor wanted his money, he presented the stick at the Exchequer, the corresponding piece was found, the two were fitted together, and the amount indicated by the notches was paid by the Exchequer. This system was in force for a thousand years or more previous to 1826, when the last payment on a tally stick of which there is any record, was made. During that long period a large amount of money accumulated in the Exchequer in the form of unclaimed deposits, which were represented by a large number of these wooden tally sticks. Even in modern times large amounts of money accumulate in the banks in the form of unclaimed deposits. Naturally the failure of depositors to claim their money during the middle ages would be more frequent than under the more peaceful conditions of modern times. Many of the depositors in the British Exchequer were Jews, who for centuries suffered persecution in England as cruel as any suffered by that race in Russia in recent years. It is believed that a large part of the unclaimed deposits in the British Exchequer belonged to Jews, who had lost their property, many of them their lives, in the persecutions during the dark ages.

With the adoption of written records the tally stick system, which had been used so long, became obsolete, and the British Exchequer found itself in 1834 encumbered with several cords of these sticks, the evidence of debts, large and small to unnumbered generations of gentiles and Jews. In that year the officials of the Exchequer decided that the old sticks should be destroyed and an order was issued to that effect. It was at first proposed to make a big bonfire with them in the open yard connected with the Parliament Houses.



TWO VIEWS OF A TALLY-STICK FROM THE BRITISH EXCHEQUER.

Finally, however, it was decided to burn them in the furnace in the basement of the House of Lords. They were brought from the Exchequer to the basement on Wednesday, Oct. 15, 1834, and early the next morning two or three men began this unusual task.

A STRANGE CONFLAGRATION.

A pile of little notched sticks bearing strange looking inscriptions in abbreviated Latin and old English script. The evidence of thrift for a thou sand years. Tokens of all the motives that prompt men and women to save. Love and hate, greed and sacrifice, hope and fear, frugality and fraud, the proceeds of honest toil and of crime, held for ages that the missing pieces carried away by successive generations might be redeemed, their presence a mute evidence of the blasted hopes of depositors for a thousand years. They were fed steadily to the flames from early morning until a

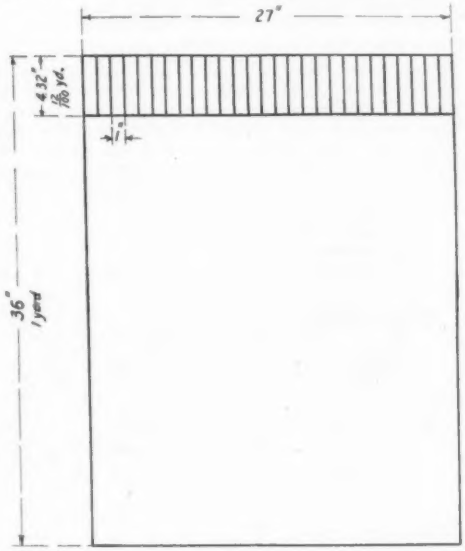


FIG. 1.

few minutes before seven o'clock in the evening of Thursday, Oct. 16, 1834, when suddenly a furnace flue, overheated by the unusual fire, started a blaze in a room above and in a few hours the House of Lords and the House of Commons were in ashes, along with nearly all the old wooden tally sticks and all the basic standards of weight and measure for the British Empire. The Houses of Parliament have been rebuilt. The standards of weight and measure were reproduced from the countless standards scattered throughout the world and which make their loss impossible except by a cataclysm that would destroy the world itself. But a few of the old tallies were saved. These were carried to the standard office, where they remained until a few years ago. I am the possessor of one of these, which you see here. It is for £3, 6s, 8d and bears this inscription: "Deposit by Thos. de Lovetot in the 20th year of Edward III" (1347), five hundred and sixty-one years ago and one hundred and forty-five years before the discovery of America. I shall be glad to redeem the missing part of this tally at its face value.

But to return to the point in our calculations where we were interrupted by the fire:

CLOTH ANALYSIS.

Among the most important textile calculations are those involved in the analysis of cloth. And it is for such calculations that the cotton count is especially adapted. Suppose that we have received for analysis a sample of cotton cloth 27

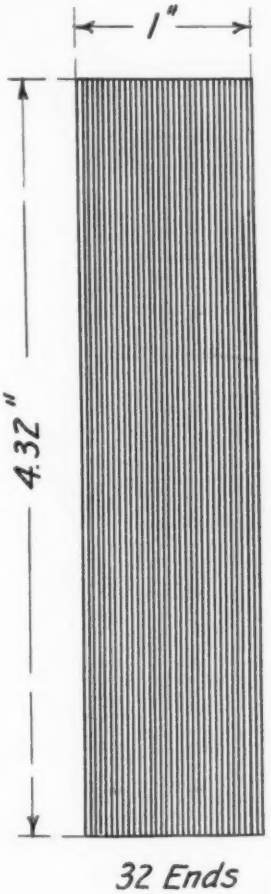


FIG. 2.

inches wide. The weight of the cloth and the size of the warp and filling are found as follows:

A sample with an area of 4.32 square inches (1/300 square yard) is cut and weighed, the weight being 3.1 grains. We find 32 threads per inch in the warp, and 20 picks per inch in the filling.

Weight: 3.1 grains per 4.32 square inch = 3.1 ounces per yard 52 1/2 inches wide. Thus the weight per yard 52 1/2 inches wide is found without calculation, being equal in ounces to the

grains in the weight of the sample. The reason is obvious:

1 grain : 437 1/2 (grains per ounce) :: 4.32 (square inches) : 1,890 (square inches per yard 52 1/2 inches wide).

The goods, however, are 27 inches wide. Then by proportion: 4.8 (grains) × 27 (inches) ÷ 52 1/2 (inches) = 1.6 ounces per yard.

20 (picks per inch) ÷ 1.6 (grain weight of filling) = No. 12 1/2 cotton.

MORE USEFUL RELATIONS.

It is a curious fact that the area, 4.32 square inches, which, by its relation to the cotton hank, enables us to calculate the cotton count so easily, is exactly 1/300th of a square yard. This makes

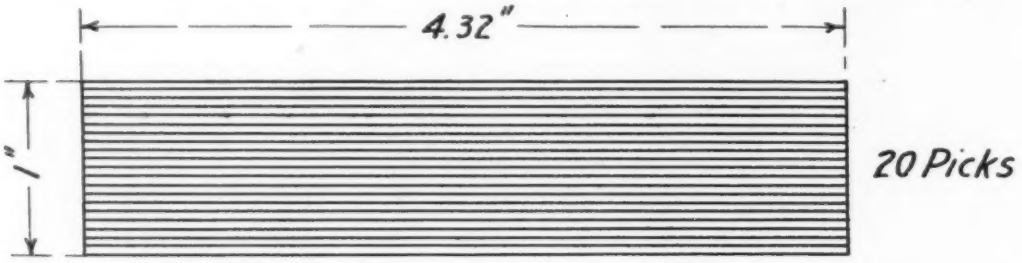


FIG. 3.

But suppose the number of yards per pound is wanted. Then 840 ÷ (3.1 grains × 27 inches) = 10 yards per pound.

The last process is thus explained:

The number of yards per pound is equal to 7,000 (grains) divided by the weight of the grain weight of one yard. The sample is equal in area to a piece one inch wide and 12/100 yard (4.32 inches long). If, then, we multiply the weight of the sample by the width of the cloth in inches we get the grain weight of 12/100 yard of the cloth, see

it possible to calculate the weight per square yard and the square yards per pound by the following straight line operation:

(3.1 grains × 300) ÷ 437.5 (grains per ounce) = 2.1 ounces per square yard. 7,000 (grains per pound) ÷ (3.1 × 300) = 7 1/2 square yards per pound.

The form, 1 inch × 4.32 inches, is used here for the sake of clearness in illustration. The particular shape of the sample is immaterial as long as the area is 4.32 square inches. A rec-

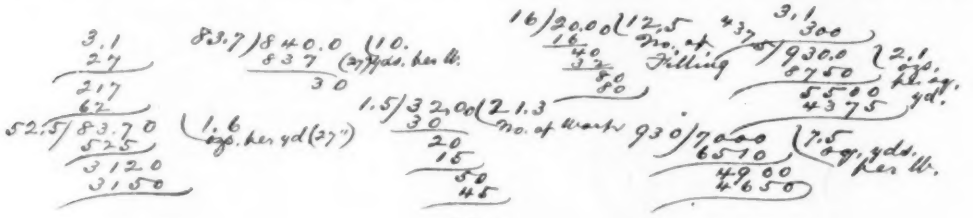


FIG. 4.

Fig. 1. It is obvious that the number of yards per pound is equal to the number of 12/100-yard lengths per 12/100 pound. Accordingly dividing 840 (grains in 12/100 yard) by the grain weight of 12/100 yard gives the number of yards per pound.

We come now to the size of the yarn:

We first ravel the sample and weigh the warp and filling separately, finding the warp to weigh 1.5 grains; the filling 1.6 grains. Then:

32 (threads per inch) ÷ 1.5 (grains warp) = No. 21.3 cotton.

This operation is based on the fact that the cotton count is equal to the number of 4.32 inch lengths per grain. As the sample is equal in area to a sample 1 inch wide and 4.32 inches long, Fig. 2, there are as many 4.32 inch lengths of warp in the sample as there are warp threads per inch.

Dividing 32 (4.32 inch lengths in sample) by 1.5 (grain weight of warp) gives the number of 4.32 inch lengths per grain, which is the cotton count.

For the same reason the size of the filling, Fig. 3, is thus found:

tangular sample, 1.8 inches × 2.4 inches will be found as convenient as any.

We have now made the principal calculations for the analysis of the fabric. As is always the case with mathematical operations, the explanation is much longer than the process itself. This is evident from the calculations at Fig. 4, which comprises all that we have made.

INTELLECTUAL FREEDOM.

The calculator should know for himself that his work is right. His constant endeavor should be to improve on old methods in the direction of greater simplicity and accuracy. He should be ever ready to discard the old for the new when he is satisfied the new is the better way. This is the course I commend to the Lawrence Textile School. The old methods, which will necessarily be introduced here at first, should stand or fall on their merits.

The simplest process is generally the best. Wherever possible the problem should be solved by the simplest rules of simple arithmetic. Occa-

sionally questions will arise in textile calculations that require the use of algebra or geometry. Even then the aim should be to use the simplest and most direct of algebraical and geometrical processes. Textile calculations are simple. To involve them in long and complicated operations in higher mathematics means a loss of time. It is the affectation of the bookish man, not the natural path of least resistance followed by the practical man.

A calculator should understand every step in his calculation. There should be a clear mental picture of the process on his mind. If this is not the case, he should stop and determine the reason before proceeding further. There is nothing so easily forgotten as an arbitrary rule for calculation. There are few things more difficult to forget than a process of calculation for which the reason is once clearly understood. In this work nothing should be accepted on mere authority, simply because someone says it is true.

We hear a great deal nowadays about industrial education. There is a sharp conflict of opinion between educators themselves as to the best methods of instruction and training. While the experts are disputing let this school furnish an object lesson of the everlasting truth that the best method of imparting instruction is to give the man who wants to know the truth, facilities for finding it by his own efforts.

Commencement Exercises at the Textile Schools.

The Bradford-Durfee Textile School.

The graduation exercises of the Bradford-Durfee Textile School of Fall River, Mass., took place Monday evening, June 1, at the school. The occasion marked the close of the fourth year of the school and the most successful in its history. One day student received a diploma and 104 evening students received certificates.

President Leontine Lincoln extended a cordial welcome in which he referred to the school's beginning, the history of the past four years, and the increased usefulness of the future, aided by the record of successes made by the alumni and their loyal support. The complete program is given below:

Overture—Orpheus Orchestra.
Address of Welcome—Leontine Lincoln, President of the School.
Address—"Science and the Useful Arts," Jonathan Thayer Lincoln.
Selection—Orpheus Orchestra.
Address—Honorable Rufus A. Soule, of New Bedford.
Selection—Orpheus Orchestra.
Address—James E. Cunneen.
Presentation of Diplomas and Certificates, Leontine Lincoln, President of the School.
Selection—Orpheus Orchestra.

The address of Mr. J. Thayer Lincoln, in which he traced the development of cotton manufacturing from earliest times to the present, was followed with a great deal of interest. The subject of his address was "Science and the Useful Arts." He spoke in part as follows: "Today, as never before, the useful arts and science referred to in the quotation which I made in the beginning of our talk, is daily growing stronger and stronger. Today, as never before, the useful arts and science go hand in hand in the course of mutual improvement; together they form the source of a marvelous social progress, raising millions of men and women above abject want, bestowing upon them comforts and luxuries never known before and with the shortening hours of labor—made possible only by the advance of science—granting them some measure of leisure in which to cultivate the body and the mind. The useful art to which you are about to devote your lives stands today in intimate relation to science and to the fine arts; it is a dignified calling which you have chosen, demanding your highest talents and your most loyal service. You have chosen the textile industry for your work in life and let me charge you that the way to success in this, as in every other department of human activity, comes but by a single way—the way of faithful, loyal service. As you go out from this school to your work in life may you remember the opportunities for success are as great today as they ever were."

Other speakers were Hon. Rufus A. Soule, president of the trustees of the New Bedford Textile School; James E. Cunneen, state trustee of the Bradford-Durfee Textile School; and Congressman William S. Greene.

The graduates with courses completed are as follows:

DIPLOMAS.

Day Course.

General Cotton Manufacturing (3 yrs.):—William Allan Evans.

CERTIFICATES.

Evening Course.

Picking and Carding (2 yrs.):—William E. Ashton, Matthew H. Bower, Richard B. Chace, Arthur F. Fish, Abel Keighley, Francis J. Phelan, Louis F. Phelan, Harold C. Smith, Absalom C. Sutcliffe, Edward I. Marvell.

Ring Spinning (1 yr.):—Albert E. Harrison, George Salter, Arthur F. Fish, William Glen, Jr., Michael J. Haran, Hugh J. Kelley, John Francis O'Neil, Frederick R. Puleston, Rufus P. Walker, William Chapman, Louis Philip Drapeau, Charles Gaudreau, William A. Langfield.

Mule Spinning (1 yr.):—Clifford C. Canfield, Robert Healey, William O. Higgins, William Schofield, Samuel Wolstenholme.

Mill Calculations (1 yr.):—Alvarado B. Bean, William H. Broomhead, Leroy E. Dwelly, John Lynch.

Plain Loom Fixing (1 yr.):—Joseph Boisselle, Jr., Claude Boocock, Joseph Burns, Frederick Bussiere, William Chapman, Daniel H. Daylor, John Gill, John J. Higginbottom, James G. Holland, Christopher T. Ainsworth, Thomas Billington, James E. Booth, Adam Brooks, William Fellowes, James Haigh Harrison, James Heywood, John W. Hoyle, Robert Mellor, John Slater, Peter Butler, Henry J. Plunkett, Francis J. Sullivan, Robert Wilkinson, Stephen Young, Joseph Skelly, Luke Suthers, Albert W. Jackson.

Box and Dobby Loom Fixing (1 yr.):—Thomas Howard, T. William Laycock, George A. Tripp, Samuel Brierley, Alfred Courville, William Haigh, George E. Robinson, John L. Streakelum, Charles Wilkinson, Thomas Wilkinson, James H. Sampson, John Wilde, Edmund Scholes, Alfred Hubert.

Dobby Designing (3 yrs.):—Fred Astin, Samuel F. Brickhill, John A. Collins, William Goodier, Louis F. Harrington, Robert Ormerod, George G. Wells, William H. Bennett.

Elementary Designing (1 yr.):—William E. Ashton, Gordon J. Harvey, James A. Murray, Thomas Townson, Edward J. Vallely.

General Chemistry (1 yr.):—Howard G. Borden, John W. Brady, Edgar C. Chandler, John H. Grenfel, Jonathan P. Hadfield, Leroy H. Hathaway, Fred D. Jones, Wilfred Philip Pratte.

Qualitative Analysis (1 yr.):—Katherine A. Burke, Henry J. Duffy, Cyprien Felix Goulet, Ephrem Nadeau.

Qualitative and Quantitative Analysis (2 yrs.):—Suekichi Fujita, William Pearson.

Elementary Dyeing (1 yr.):—Clarence W. Adams, John Conlon, Edward Smith, Mark T. Smith.

The Lawrence Textile School.

This school, which during the past year has been developed from a small beginning to a regularly organized textile school supported by the city of Lawrence and the State of Massachusetts, held its closing exercises in the Library Hall, Lawrence, on May 29. Owing to the fact that the school has been recently organized there were no regular graduating exercises. The seven hundred earnest students already enrolled leave no doubt but that important results will be attained in the years to come.

At the closing exercises a short address was made by the principal, William H. Dooley, to whom the credit is largely due for organizing the Lawrence School. He introduced Samuel S. Dale, editor of the Textile World Record, who gave a talk on textile arithmetic, which will be found in another part of this issue.

The Lowell Textile School.

The commencement exercises of the class of 1908 of the Lowell Textile School were held Thursday afternoon, June 4, in the assembly hall of the school buildings, which was appropriately decorated for the occasion. All departments of the school were open to visitors and the exhibitions of work done by students were admired by all and received praise from those familiar with the difficulties to be overcome in making finished textile products. Much favorable comment was made by those who had not previously visited the school on the admirable arrangement of work and lecture rooms and the completeness of equipment. Others, who had visited the buildings on the occasion of other graduation exercises, or at other times, were pleased by the marked progress toward the strong, evenly balanced curriculum and equipment which the founders and present officers and faculty of the school, all practical manufacturers of wide experience and educators of proved merit and ability, have recognized as the plane on which the Lowell Textile School will best serve the textile industries.

For the first time in the history of the school diplomas were given in the Department of Textile Engineering, two young men graduating from that department. One of the graduates of the Cotton Manufacturing Department is Geronimo Huesing of the Philippine Islands.

Before the presentation of diplomas several selections were given by Hibbard's Orchestra and the gathering of graduates and their guests was addressed by President Cumnock of the Board of Trustees of the School; James T. Smith, clerk of the Board of Trustees; Hon. Carrol D. Wright, Principal Charles H. Eames, and other prominent men.

ANNUAL BANQUET ALUMNI ASSOCIATION.

Following the custom laid down by other years, the ninth annual meeting and banquet of the Lowell Textile School Alumni Association was held on commencement day. Before 7 o'clock the parlors of the Waverly Hotel were filled with older graduates who had gathered in good numbers for their annual celebration and reception to new members. A social hour was spent in the hotel parlors in extending the glad hand of welcome and fellowship to the graduating class of 1908. During this time the greetings of old classmates and the oft-repeated stories of undergraduate days were interspersed with selections by Senator Hibbard's Orchestra, which added much to the keen enjoyment of those present and induced spontaneous outbreaks in old textile songs, with many variations.

About 8 o'clock the banquet was served. The tables were arranged in a hollow square, the open place being banked with ferns and flowers, which produced a very pleasing effect. The members and guests sat down to an excellent dinner, to which lively music and the singing of songs printed on the menu added a measure.

At the conclusion of the dinner and after cigars were lighted, Mr. A. J. Hannigan of Boston, vice president of the Association and a member of the class of '06, called the members to order and as toastmaster introduced the several speakers in a happy manner. A. G. Cumnock, treasurer of the Appleton Co. and president of the Board of Trustees of the Lowell Textile School, was the first speaker of the evening and handled his subject in his characteristic, interesting and instructive manner. James T. Smith was the next speaker and his subject was the "Future Development of the School." By the attention during Mr. Smith's address and the ovation given him at its conclusion, it could easily be noted that both speaker and subject were high in the thoughts of the Alumni Association. Principal Eames responded to the toast, "The Faculty," and in a few strong sentences urged the Alumni to assist as much as possible in bringing the school to a higher plane of effectiveness. Mr. Wingate, president of the graduating class, made a few happy and optimistic remarks in response to the toast, "Our New Members."

After the speaking a business meeting was called, officers elected, and a new constitution, giving the Alumni Association a broader foundation and increased powers of working for the welfare of the school and the members, was adopted.

Before the members and guests departed, a unanimous vote of thanks was tendered Mr. A. A. Stewart for his interest and able efforts expended in making the ninth annual meeting and banquet the most successful in the history of the Association.

Among those present in addition to the regular members of the Alumni were several members of the Board of Trustees, including A. G. Cumnock, treasurer of the Appleton Company, and president of the Board of Trustees; James T. Smith, clerk of the Board of Trustees; E. S. Hylan, treasurer of the New England Bunting Co.; F. A. Flather, treasurer of the Boott Mills; Wm. E. Hall, treasurer and general manager of the Shaw Stocking Co.; also Principal Eames and the members of the faculty of the Lowell Textile School.

The graduates of the day classes of 1908, with the titles of thesis, are as follows:

George Richard Abbott, wool manufacturing, Andover, Mass. "The Uniformity of Twist at Different Stages of Building of a Warp Bobbin."

Horace W. C. S. Ballard, chemistry and dyeing, Marblehead, Mass. Thesis with W. H. Wingate. "An Investiga-

tion of the Comparative Fastness of the Natural, and Coal-Tar Coloring Matters."

John Francis Dwight, Jr., wool manufacturing, Dorchester, Mass. Thesis with L. S. Farr, O. D. Gay. "The Manufacture of a Fancy Worsted."

Leonard Schaefer Farr, wool manufacturing, Holyoke, Mass. Thesis with J. F. Dwight, Jr., O. D. Day.

Olvin Dow Gay, wool manufacturing, Cavendish, Vt. Thesis with J. F. Dwight, Jr., L. S. Farr.

Walter Eastman Hadley, chemistry and dyeing, Lowell, Mass. "A study of the Methods in Use for the Determination of the Fastness of Dyestuffs to the Common Color Destroying Agencies."

Geronimo Huerva Huising, cotton manufacturing, Philippine Islands. "The Effect of Spindle Speed and Draft Upon the Evenness and Strength of a Cotton Yarn."

Leland Aldrich Jenckes, textile engineering, Dorchester, Mass. "A Comparison of the First Costs of the Transmission Equipment of a Mechanically and Electrically Driven Mill."

LeRoy Clark Lewis, chemistry and dyeing, North Woburn, Mass. "Dyeing of Leathers."

Joshua Dean Perkins, textile designing, East Bridgewater, Mass. "Color Effects in Tapestry Weaving."

Howard Twisden Mailey, wool manufacturing, Lynn, Mass. Thesis with F. B. Reynolds. "A Comparison of Worsted Mule and Cap Spun Yarn."

Sylvanus Cushing Prince, textile engineering, Lowell, Mass. "Calibration of a Direct Current Motor and Tests on a Motor Driven Spinning Frame."

Braman Proctor, chemistry and dyeing, Wrentham, Mass. "Comparative Fastness of the Reduction Vat Colors, with other Coal-tar Dyestuffs Producing Corresponding Colors."

Fred Bartlett Reynolds, wool manufacturing, North Andover, Mass. Thesis with H. T. Mailey.

Ernest Warren Robinson, chemistry and dyeing, Haverhill, Mass. Thesis with W. E. Weinz, "An Investigation of the Value of Formic Acid as an Adjunct in Various Textile Coloring Processes in Comparison with other Similar Substances, Ordinarily Used."

William Elliot Weinz, chemistry and dyeing, Roxbury, Mass. Thesis with E. W. Robinson.

William Henry Wingate, chemistry and dyeing, Lawrence, Mass. Thesis with H. W. C. S. Ballard.

The Philadelphia Museum and School of Industrial Art.

The graduating exercises of this school, which includes the Philadelphia Textile School, were held in the Academy of Music on Thursday, June 4. Previous to the delivery of the diplomas addresses were made by Mayor Reyburn and Hon. J. Hampton Moore. The diplomas were then awarded by President Search and the prizes by Prof. Leslie W. Miller, principal of the Museum and School of Art.

Full Course Certificates.

Day Classes.

Cotton Course (2 yrs.):—John Washington Clark, Gilbert Foster Hambley, Littleton Coleman Fleming Hambley, Harold David Helser, Guy Oliver Hunter, William Dunlop Stewart.

Wool Course (2 yrs.):—Donald Ellerby Battey, Robert Warren Kirkland, Stephen Douglas McKenna.

Silk Course (2 yrs.):—Tipp Yen Dong, Daniel Albert Wechsler.

Jacquard Course (2 yrs.):—Raymond Walter Eastop, Charles Hartley Walter Mactague.

PARTIAL COURSE CERTIFICATES.

Day Classes.

Regular Course (2 yrs.):—Alanson Cady, Arthur Carl Walter Claassen, Clarence Irving Cutchin, Jacob Feurstman Goldstein, Warren Adelbert Johns, Wilbur Lyle Kirby, Edward Legge, Mortimer Francis Mehling, Theodore Hamilton Schumann, Daniel Webb Strayer, Louis August Teillon, Roderick Gustav Wienandt, Joseph Bang Kee Wong.

Chemistry, Dyeing and Printing Course (2 yrs.):—David Alfred Smith, Max Wise Smith, William Clarence Thudium, John Francis Waters.

FULL COURSE CERTIFICATES.

Evening Classes.

Regular Textile Course (3 yrs.):—Harry Hodgson, William W. Robertson, William Schillenger, William G. Scholes, Hudson Teale.

Chemistry and Dyeing Course (3 yrs.):—Jules A. Cook. William Etchels, Robert S. Leithead, 3d, Charles F. Montague.

PRIZES.

The prizes were as follows: Associate Committee of Women's prize to Ernest M. Groos for work in Jacquard design. The Miss Clyde prize to Arthur S. Claassen, Jr., for work in Jacquard design. The Elizabeth C. Roberts prize to Charles H. Mactague for work in Jacquard design. The Delta Kappa Phi Fraternity prize to Frederick E. Wasson for work on the hand harness loom. The Phi Psi Fraternity prize to Edward J. McMillan for work in color harmony and design. The Textile World Record Gold Medal to Elmer C. Bertolet for work in chemistry, dyeing and printing. National Association of Cotton Manufacturers Medal to Karl R. Paul for general excellence. The Henry Friedberger memorial prize to Arthur Wells for general excellence. Advisory Committee on Chemistry and Dyeing prize to Wm. C. Thudium for best thesis in chemistry. Ab. Kirschbaum & Co. scholarship to Laurence A. Wechsler for highest rating. Prize scholarships for the school year, 1908-09, awarded to Wilbur L. Kirby, David A. Smith, Charles L. Benning and Harry Leber.

The Textile World Record Gold Medal was presented by Samuel S. Dale, who spoke as follows:

You may well feel elated by the award of this medal because of what it represents, recognition from an American textile school than which none is older or has a higher reputation for efficiency. On such an occasion it may not be out of place to consider not only what you have done in this school, but also your future work in the textile field. All that has been done up to this time has been but in preparation for the real activities of life. Your work in this school would be of little if any value were it not for what you must do in the future to provide yourself with the necessities and luxuries of life. The real thing is still to come, and it is of the greatest importance that you should look both forward and backward at things in their correct perspective. Valuable as is the training you have received here, that which awaits you in the mill is vastly more important. It is not necessary to depreciate technical training in order to place the correct estimate on so-called practical experience. The two should be united. It is natural that the graduate knowing so much of the school and so little of the mill, should overestimate the value of the former. The mistake of the other extreme is made by the man who, knowing so much of the mill and so little of the school, underestimates the value of the latter.

To reach the truth the purely practical man must learn that the preparatory training of the school is a most efficient means of reducing the cost and improving the quality of the manufactured product. To reach the same truth the graduate must rid himself of the exaggerated idea of school training that he has naturally acquired in the class room. By doing this he will escape a handicap under which many graduates have labored in the past and which is in a great measure responsible for the prejudice so often exhibited by manufacturers against textile schools.

Your success in this school is a happy augury for your success in the mill. In the mill you will be a part of a great industrial organization formed for the purpose of supplying the finished product to the consumer. You will learn as never before the necessity of obedience and loyalty to your immediate superior. You will have driven home to you a clearer idea of the value of industry, accuracy and a spirit of investigation and improvement. You will learn that the difficulties in mill work are always aggravated by ignoring them; that they generally turn out to be less serious than expected when they are boldly faced; you will be strengthened by the difficulties you overcome and will sooner or later become possessed of the knowledge and skill that can be obtained only by rude contact with the conditions of industrial and commercial competition.

Fortunately no formula can be laid down for success in the struggle before you. Its chief charm lies in its uncertainties. It is more exhilarating and stimulating than base ball, horse racing or any game of chance. You will enter it well prepared by this school. To reduce your chance of failure to a minimum all you need is that of which Lord Lytton said: "Nothing is so contagious as enthusiasm; it is the real allegory of the tale of Orpheus: it moves stones,

it charms brutes. Enthusiasm is the genius of sincerity, and truth accomplishes no victories without it."

After the presentation of the diplomas and prizes an address to the graduates was made by President Theodore C. Search.

The Alumni Association of the Textile School held an informal reunion on Thursday afternoon at which the following papers were presented: "Wool Shoddies," by Henry B. Barnet. "Hard Knocks for the Young Manufacturer," by Frank W. Simons. "The Development of Weaving Machinery," by George A. Denny. At this meeting the old officers of the Association were re-elected.

On Friday the Association had its annual cruise on the Delaware. A landing was made at Essington where a large number of students and invited guests proceeded to the athletic grounds. There was a ball game and a tug of war between the married and single men, the married men meeting defeat in both encounters. The program also included a fat men's race, a free for all race, and games of quoits and shuffle board. These sports occupied about three strenuous hours, when the party returned to the boat for needed rest. On the return trip President Algeo awarded a large number of prizes to various persons for diverse reasons, one of the conditions being that each recipient should make a speech of not over ten minutes through a megaphone to the boat load of passengers. This feature of the excursion was thoroughly enjoyed by all, including even those who received the prizes.

In the evening the Alumni Association gave its annual banquet at the Hotel Majestic. President Algeo of the Association presided and introduced the following speakers:

George S. Smith of Boston, vice president of the National Association of Clothiers, who spoke on "The High Grade Business Man."

Comptroller Herman A. Metz of New York, whose subject was "The Business Man in Politics."

Prof. Ludwig E. Faber, who gave a very interesting and scholarly address on "Some Impressions of Higher Industrial Education in Europe."

Mayor John E. Reyburn of Philadelphia made an address.

The speaking concluded with an address by Theodore C. Search, who is the father of the Philadelphia Textile School. Mr. Search was instrumental not only in founding that school, but has stood by it in the days of small things and has watched its advance to its present high position, under the management of the director, Prof. E. W. France. The development of technical education in other parts of the country, particularly Massachusetts, is also due largely to the efforts of Mr. Search. One of the very gratifying features of the commencement exercises and the banquet was the enthusiastic reception accorded to Mr. Search, all endeavoring to let him know in an unmistakable manner that his work in behalf of textile education in this country is remembered and appreciated.

Pennsylvania, Philadelphia. The Little Falls Mills, Stafford & Co., proprietors, have resumed full time. The plant has been operated on short time for a number of weeks.

The New Bedford Textile School.

The graduation exercises of the New Bedford Textile School held on Friday evening, May 29, were of more than ordinary interest and were attended by many friends of the graduates and of the school. Three Chinese students were among the young men receiving diplomas in the day classes. The exercises were held in the County St. Methodist Church, the following program being given:

Overture—Raymond, Tolman's Orchestra.
Address—Chairman William E. Hatch, President of the Corporation.
Address—Arthur B. Chapin, Treasurer and Receiver-General of Massachusetts.
Selection—Cornet Solo, F. L. Estes.
Address—Daniel A. Tompkins, President D. A. Tompkins Co., Charlotte, N. C.
Selection—"The Merry Widow," Orchestra.
Presentation of the National Manufacturers' Association Medal, Nathaniel B. Kerr, Trustee of the Corporation.
Presentation of Diplomas and Certificates, William E. Hatch, President of the Corporation.
Selection—March from "The Waltz Dream," Orchestra.

One of the most interesting features of the exercises was the presentation of the gold medal of the National Association of Cotton Manufacturers to William G. Blair of Whitinsville, Mass. Addresses were delivered by State Treasurer Arthur B. Chapin; D. A. Tompkins, the prominent manufacturer and author of Charlotte, N. C.; and Wm. E. Hatch, president of the Corporation. Mr. Hatch also presented diplomas to the graduates.

All day Thursday and Friday the school buildings were open to the public and several hundred people were conducted through the various departments and shown the exhibits of students' work by Principal Nichols and a corps of assistants. The display was excellent and spoke well for the work of students under the direction of Mr. Nichols and his assistants.

The list of graduates follows:

DIPLOMAS.

Day Classes.

General Cotton Manufacturing Course:—William Gardiner Blair, Chee Lee Tsu, Chih Yeh Chang.

Cotton Carding and Spinning Course:—William Booth, James Frank Kinney.

Designing Course:—Lester Davenport Patt.

Seamless Hosiery Knitting Course:—Yee Buck Deu, John V. Gallagher.

Evening Classes.

General Cotton Manufacturing Course:—Philip Curtis Holmes.

CERTIFICATES.

Cotton Picking, Carding and Combing:—John G. Cananas, Charles R. Church, William F. Days, George D. Gendron, Isaiah Hadfield, James Martin, John J. McAuliffe, Jr., James A. McKenzie, Hugh John Rooney, Thomas Brock Taber, Walter Wilkinson.

Mule Spinning:—Frank Buckley, Christopher Denham, Edward Foley, James Gill, Isaac M. Hibbs, James Woollam.

Ring Spinning:—Louis E. Bachand, Harrison S. Jenney, Henry Clay Perry, Jr.

Cotton Sampling:—Oscar Buffington, William M. Miller, Ralph Boyd Wilson, Henry J. Ackerman, Samuel Leroy Allen, Walter Loomis Coe, Joseph H. Cookson, Richard Cowell, Benjamin C. Danforth, James Griffin, Clinton N. Hayes, Dexter W. Lewis, Walter H. Miller, Leander A. Plummer, Jr., Robert Sibor, Wallace C. Terry, James A. McKenzie, Shorb F. Jones.

Warp Preparation:—Richard J. Barton, Joseph Bleasdale, Donat Bourassa, John Burke, John J. Gannon, Richard Parkinson.

Plain Weaving and Fixing:—Heaton Atkinson, John Bradley, Oscar Lavole, William Mitchell, Luke Murphy, George Oldham, Arthur Ousley, Milton Rothwell, Peter F. Slater,

Joseph Taffe, Walter Thomas, John H. S. Wignall, Edward Winterbottom, George Wright.

Fancy Weaving and Fixing:—William Acomb, Franklin M. Darling, Jr., Moses Dewhurst, David J. Finn, William Gorton, Walter Greenwood, James Halsall, James R. Riding, John A. Rothwell, John E. Sullivan, James Tootell, Frederick D. Walton, Herbert Ward, Albert Whiteley.

French Class in Weaving and Fixing:—Adelard Blanchette, Amedee Blanchette, Joseph Boulet, Joseph Chevrette, Adelard Courtemanche, Eli Duplessis, Harmidas Fontaine, Albert Fournier, James A. Gaucher, Arthur LeBeau, Hugh Lesieur, Leo Reaume.

Designing:—John C. Astley, Frederick R. Brown, Christopher Cheetham, Frederick W. Holt, Emanuel Ormerod, Thomas Rawcliffe, Walter Sterling.

Yarn Mill Arithmetic:—Leonard W. Maine, William T. Morgan, Leo Tremblay, Walter Whitehead, P. Thomas Wing, John Albert Lee.

Mechanics and Drawing:—Herbert Atkinson, Morris H. Crompton, Simeon B. Livesley, Lawrence C. Maud, James D. Meakin, Manuel J. Perry, William E. Rankin, Mark Redfern, John P. Stratton, Samuel Tablas, Daniel K. Valentine, Harold H. Williamson, Arthur J. Zerbone, William E. White.

Recent Textile Patents.

BOBBIN and Spindle Connector. 886,297. Henry E. Hughes, Central Falls, R. I.

BOBBIN-DRIVING Means for Rotatable Spindles. 885,855. Andrew D. Morse, Hopedale, Mass.

BOBBIN SPINDLE. 886,459. Horace Wyman, Worcester, Mass., assignor to Crompton & Knowles Loom Works, Worcester, Mass.

CLOTH-BEAMS. Smoothing Device for. 887,428. Ryan Rosendale, Paterson, N. J., assignor to Henbert Silk Co., Paterson, N. J.

DYEING MACHINE. 887,511. Jesse M. Payne, Phoenix, and George G. Wallace, Girard, Ala., assignors of one-sixth to Edward W. Swift and one-sixth to James P. Kyle, Columbus, Ga.

DYEING MACHINE. 12,781. Joseph Hussong, Camden, N. J.

DYEING and Extracting Machine. Hosiery Figure. 885,709. Charles S. Althouse, Reading, Pa.

DYEING MACHINE. 12,788. Joseph Hussong, Camden, N. J.

DYEING. Preparation of the Indigo Vat Employed in. 885,978. Henri Chaumat, Paris, France.

FIBER-SEPARATING Machine. 884,635. Chas. L. Buckingham, Denver, Colo.

FIBERS. Preparing. 884,401. Keith Matthews, Auckland, New Zealand.

HOSIERY-DRYING Boards. Cushioning Protector for. 885,728. James J. Crimlisk, Philadelphia, Pa.

KNIT FABRIC and Making Same. 886,886. Richard R. Steiner, Bridgeport, Conn.

KNITTED FABRIC. 885,793. Robert W. Scott, Leeds Point, N. J.

KNITTED FABRIC. 885,794. Robert W. Scott, Leeds Point, N. J.

KNITTING MACHINE. Dial. 885,304. Bernard T. Steber, Utica, N. Y.

KNITTING MACHINE Needle. 885,590. George C. Egly, Philadelphia, Pa.

KNITTING MACHINES. Transferring Device for. 885,150. Albert Foster, Philadelphia, Pa.

THREAD GUIDE Mechanism. 886,638. John E. Prest, Melrose, Mass.

THREAD HOLDER for Spools. 885,517. Elizabeth S. Prescott, San Francisco, Cal.

WARP-THREAD Detecting Device. 887,475. Wilhelm Gross, Fall River, Mass.

LOOM. 887,484. George H. Leitner, Augusta, Ga.

LOOM. Dobby. 887,702. George Schwabe, Bielitz, Austria-Hungary.

LOOM. Filling-changing. 887,465. Randolph Crompton, assignor to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM. Automatic Filling-replenishing. 886,700. Ubald Herbert, Manchester, N. H., assignor to Draper Co., Hopedale, Mass.

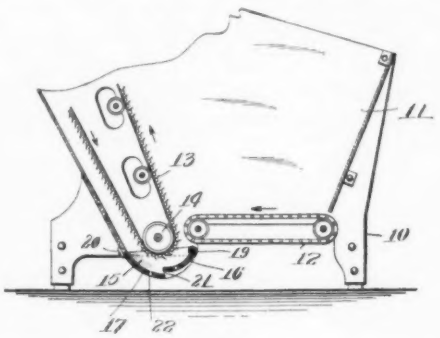
LOOM Picker Check. 886,952. Arthur S. Cowan, Worcester, Mass.

LOOM Filling-replenishing Mechanism. 884,723. George O. Draper, Hopedale, Mass.

WOVEN FABRIC. 870,697. William M. Stevenson, Indian Orchard, Mass.

FIBROUS MATERIAL. Attachment for Feeders for. 885,381. Frederick G. Sargent, Westford, Mass., assignor to C. G. Sargent's Sons Corporation, Graniteville, Mass.

The principal object of the invention is to provide such a feeder with means for separating the fiber from dirt or other heavy particles at the bottom of the elevating apron so designed that the dirt and the like will be dropped out on the floor or into a receptacle placed to receive it, without discharging the fiber, and leaving the fiber in such



position that it can be taken up by the elevating-apron in a much cleaner condition than is the case at present.

As heretofore constructed these feeders have been provided with a shell at the bottom of the elevating apron which would gradually fill up with dirt and fiber until if it were not emptied the elevating apron would pick some of the fiber and the dirt in which it lay and carry it up into the

machine being supplied with fiber. All this is done away with by the present invention, and the fiber which is left in the shell is in a comparatively clean condition so that it can go into the stock without injuring its quality.

LOOM Multiplier Mechanism. 884,862. Eppa H. Ryon, Worcester, Mass.

LOOM. Narrow Ware. 884,614. Eppa H. Ryon, Worcester, Mass.

LOOM Shedding Mechanism. 884,613. Eppa H. Ryon, Worcester, Mass.

LOOM Stop Motion. 886,150. Felix O'Donnell, Pawtucket, R. I.

LOOM Stop Motion. 886,177. Burl F. Bobo, Laurens, S. C.

LOOM Warp Stop Motion. 886,769. Joseph B. Derfinak, Mystic, Conn.

LOOMS. Automatic Weft Replenishing Apparatus for. 886,542. James Rostron, Bradford and Thomas Worman, Manchester, England.

LOOMS Reversing Mechanism for the Take-up Mechanism of. 886,871. Eppa H. Ryon, Worcester, Mass.

LOOM Take-up Mechanism. 887,485. George H. Leitner, Augusta, Ga.

LOOM Warp Stop Motion. 887,425. Alonzo E. Rhoades, Hopedale, Mass.

LOOMS. Thin-place-detecting Mechanism for. 887,446. Charles H. Warren, Atlanta, Ga.

LOOM Warp Stop Motion. 885,130. George B. Ambler, South Framingham, Mass.

LOOM Warp Stop Motion. 885,179. Alonzo E. Rhoades, Hopedale, Mass.

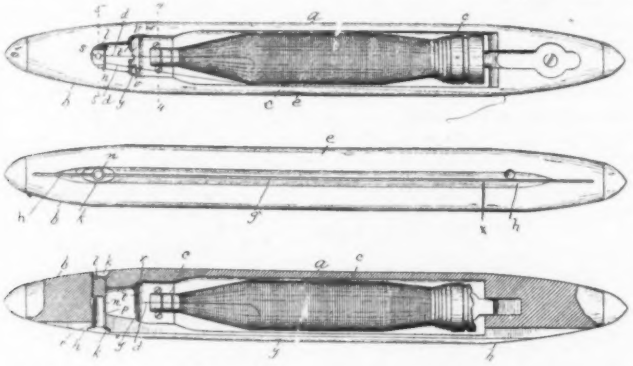
LOOM. Weft Replenishing. 885,021. Randolph Crompton, Worcester, Mass.

SHEARING Machine. Sheep. 885,991. Thomas Grace, Darlington, New South Wales.

SHUTTLE FOR LOOMS. 882,267. John A. Perkins and Orin J. Perkins, Salem, Mass.

This invention has for its principal object to prevent the thread from kinking and snarling as it leaves the shuttle, such kinking and snarling occurring usually during the first part of the return of the shuttle; and another object of the invention is to prevent bunches on the thread from passing out through the long slot in the shuttle.

This thread, d, passes from the bobbin through the notch, w, into the hole, s, from which it passes into and along the interior of the hollow portion, n, of the eye, and thence through the slot, p, and notch, y, into and out through the longitudinal slot, g, h, in the wall, e, of the shuttle. As the thread passes through this slot, g, h, at a very acute angle so that a considerable portion is in the slot, kinking and snarling after it leaves the eye are effectually prevented. As the thread is drawn along this slot it is kept relatively taut—sufficiently taut to prevent there being enough slack to allow kinking or snarling. That portion of the thread which is passing from the bobbin to the eye is prevented from interference with the portion which is passing from the eye to the slot, g, h, by the notched partition, t, the two said portions of the thread being guided respectively by the notches, w and y, and being kept apart by that part of the partition which is between the notches.



SPINDLE. 886,789. Charles S. Foster, Pawtucket, R. I.

SPINNING and Twisting Machine. 884,621. Thos. D. Singleton and William Gleason, Providence, R. I.

SPINNING-MACHINE Thread Guide. 884,700. Fred Ambler, Bradford and Harry Wallace, Bradford, England.

SPINNING and Twisting Spindle. 887,162. Valorus S. Westcott and George B. Allen, Pawtucket, R. I.

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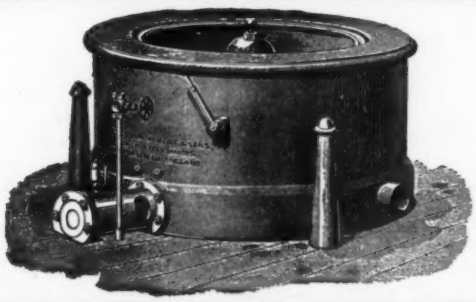

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——See Steam Boilers.

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——See also Dyeing, Bleaching, Machinery, etc.

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Jacquards.
Halton's, Thomas, Sons.

Knit Goods, Edgings, Trimmings, Etc.
Chapin, Geo. W.
Charles, W. B.
Cheney Bros.
Friedberger-Aaron Mfg. Co.
Krout & Fite Mfg. Co.
Weimar Bros.

Knit Goods, Finishing Machines Crochet, Etc.
Consolidated H. S. & L. M. Company.
Merrow Machine Co., The.
Nye & Tredick Co.
Robinhold Machine Co.
Scott & Williams.
Union Special Machine Co.
Willcox & Gibbs Sewing Machine Co.

Knitting Machine Cylinders.
Paxton & O'Neill.
Stafford & Holt.

Knitting Machinery.
Boss Knitting Machine Co.
Brinton, H., & Co.
Claes & Flentje.
Cooper, Chas.
Crane Mfg. Co.
Crescent Machine Co.
Dubied, Edouard, & Co.
Excelsior Knitting Machine Mfg. Co.
Gormly, Robt. W., & Co.
Grosser Knitting Machine Co.
Hemphill Mfg. Co.
Jenckes, E., Mfg. Co.
Jones, Lewis.
Lamb Knitting Mach. Mfg. Co.
Leighton Machine Co.
Mayo, Geo. D., Knitting Machine Co.
Mayo Knitting Machine & Needle Co.
National Automatic Knitter Co.
Nye & Tredick Co.
Paxton & O'Neill.
Ruth Machine Co.
Scott & Williams.
Stafford & Holt.
Standard Machine Co.
Taylor, James.
Tompkins Bros. Co.
Walther, Otto.
Wildman Mfg. Co.

Knitting Needles and Supplies.
Breedon's, Wm., Son.
Brinton, H., & Co.
Continental Latch Needle Company.
Cooper, Chas.
Corey, Wm., Co.
Crane Mfg. Co.
Dodge Needle Co.
Excelsior Needle Co.
Grosser Knitting Machine Co.
Ives, L. T., Co.
Lamb Knitting Machine Mfg. Co.
Keystone Latch Needle Co.
Mayo Knitting Machine & Needle Co.
Page Needle Co.
Ruth Machine Co.
Wardwell Needle Co.

Lamps, Incandescent.
General Electric Co.
Pettingell-Andrews Co.
Westinghouse Electric & Mfg. Co.

Loom Pickers.
Garland Mfg. Co.

Looms.
Crompton & Knowles Loom Works.
Draper Company.
Kilburn, Lincoln & Co.
Leigh, Evan A.
Lowell Machine Shop.
Mason Machine Works.
Stafford, Geo. W., Co.
Stoddard, Haserick, Richards & Co.
Whitin Machine Works.

Loopers.
Beattie Machine Works.
Hepworth, John W., & Co.
Leighton Machine Co.

Lubricants.
Borne, Scrymser Co.
Dixon, Jos., Crucible Co.
N. Y. & N. J. Lubricant Co.
Olney & Warrin.

Lubrication Engineer.
Davis, Wm. M.

Lubricators.
Detroit Lubricator Co.
Walworth Mfg. Co.

Lumpers.
Gerry, George, & Son.
Schofield, Wm., Co.

Machine Designers.
Adams, A. L.
Cameron Machine Co.

Machinery Dealers.
Jefferson, Ed., & Bro.
Lamb, J. K., Textile Mach. Co.
Schofield, Geo. L.
Taylor, James.

Machinists.
Adams, A. L.
Calder Machine Works.
Cameron Machine Co.

Machinists' Tools.
Whitin, The D. E., Co.

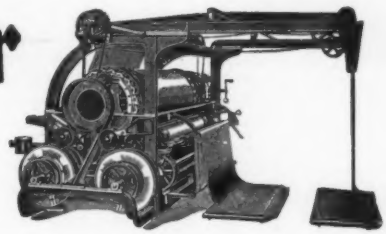
Mails.
Walder, J.

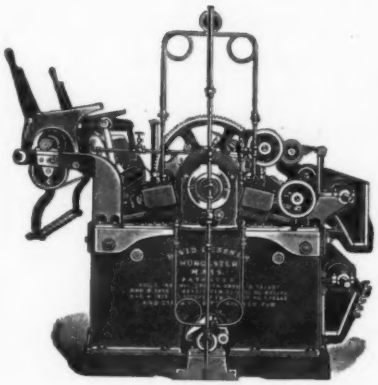
Marking Pots.
Bradley, A. J.

Alphabetical Advertising Index, with page numbers, follows this list.

David Gessner

Worcester, Mass.





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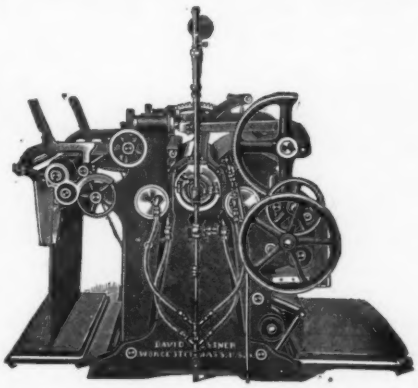

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We want your contract, and should be pleased to have our lamp expert call on you, and ascertain just what type of lamp is best adapted to your purpose.

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Adams, A. L.
Curtis & Marble Machine Co.
Elliott & Hall.
Root, C. J., Co.

Mechanical Draft.
American Blower Co.
Buffalo Forge Co.
Massachusetts Fan Co.

Mechanical Draughtsmen.
Sturtevant, B. F., Co.
Cameron Machine Co.

Mechanical Engineers.
American Blower Co.
Buffalo Forge Co.
Dodge Mfg. Co.
Gilbreth, Frank B.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Mechanical Stokers.
Murphy Iron Works.

Mercerizers.
Globe Dye Works Co.
Home Bleach & Dye Works.
Lorimer, Wm. H., Sons Co.

Mercerizing Machinery.
Buhlmann, A. W.
Butterworth, H. W., & Sons.
Klauder-Weldon Dyeing Machine Co.
Schwartz, L. H. A., & Co.
Smith, Drum & Co.
Textile Finishing Machinery Co.

Metallic Fire-proof Window Frames and Sashes.
Badger, E. B., & Sons Co.

Metallic Packing.
Power Specialty Co.

Mill Architects.
—See Architects and Mill Engineers.

Mill Builders and Engineers.
Ferguson, John W.

Mill Supplies.
American Supply Co.
Bamford & Smith.
Buckley's, Benjamin, Sons.
Burnham, E. E., & Co.
Crosby Steam Gage and Valve Co.
Easton-Burnham Co.
Eureka Fire Hose Co.
Garland Mfg. Co.
Jefferson, Ed., & Bro.
Lane, W. T., & Bro.
Leigh, Evan A.
Murphy, E. W., & Co.
N. Y. & N. J. Lubricant Co.
Olney & Warrin.
Philadelphia Drying Machinery Co.
Pratt, R. C.
Riley, C. E., Company.
Richardson Bros.
Shaw, Victor, Ring Traveler Co.
Stephenson Mfg. Co.
Stoddard, Haserick, Richards & Co.
Thurston, A. G., & Son.
Vandegrift, Elias T.
Walworth Manufacturing Co.

Motors (Electric).
Buffalo Forge Co.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Napping Machinery.
Birch Bros., Somerville Machine Wks.
Curtis & Marble Machine Co.
Gessner, David.
Jones, Lewis.
Leigh, Evan A.

Noils (Silk).
Malcolm Mills Co.
Ryle, Wm., & Co.

Non-Fluid Oils.
N. Y. & N. J. Lubricant Co.

Oil Cups.
Walworth Manufacturing Co.

Oils.
Borne, Scrymser Co.
Eurckhardt & Co.
Harding & Fancourt.
Murphy, E. W., & Co.
New York & New Jersey Lubricant Co.
Stephenson Mfg. Co.
Vera Chemical Co.

Oil Stencil and Press Board Paper.
Bradley, A. J.

Overseaming Machines.
Merrow Machine Co.
Willcox & Gibbs Sewing Machine Co.

Packings (Metallic).
Power Specialty Co.

Paints (Wood Preserving).
Carbolineum Co.

Pantagraphs for Mill Engraving.
Johnson, C. A., & Co.

Paper.
Merwin Paper Co.
Richardson Bros.

Paper Boards.
Merwin Paper Co.

Patent Solicitors.
Crosby & Gregory.
Howson & Howson.
Industrial Law League Inc.

Perforated Metals.
Hopkins Machine Works.

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Pipes and Fittings.
Scaife, W. B., & Sons.
Walworth Manufacturing Co.

Pneumatic Conveying.
—See Ventilating.

Portable Hoists.
Economy Engineering Co.

Power Transmission Machinery.
Almond, T. W., Mfg. Co.
American Mfg. Co.
American Pulley Co.
Cell Drier Machine Co.
Cresson, Geo. V., Company.
Dodge Mfg. Co.
Evans, G. Frank.
Farrel Foundry and Machine Co.
Hunter, Jas., Machine Co.
Kilburn, Lincoln & Co.
Olney & Warrin.
Philadelphia Drying Machinery Co.
Plymouth Cordage Co.
Reeves Pulley Co.
Saginaw Manufacturing Co.
Schofield, Wm., Co.
Sellers, William, & Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Preparatory Machinery (Cotton).
Howard & Bullough Am. Machine Co.
Kitson Machine Co.
Leigh, Evan A.
Riley, C. E., Company.
Saco & Pettee Machine Shops.

Presses.
Boomer & Boschert Press Co.
Butterworth, H. W., & Sons Co.
Curtis & Marble Machine Co.
Gessner, David.
Hart, Charles.
Minnich Machine Works.
Phila. Drying Machinery Co.
Spence & Rideout.
Sullivan Machinery Co.
Textile Finishing Machinery Co.
Woonsocket Machine & Press Co.

Press Papers.
Merwin Paper Co.
Richardson Brothers (Importers and Dealers).

Pressure Regulators.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Pulley Covering.
Olson, Chas. E. A.

Pulleys.
—See Power Transmission Machinery.

Pumps.
Dean Bros. Steam Pump Works.
Goulds Mfg. Co.
Philadelphia Drying Machinery Co.
Textile Finishing Machinery Co.

Pump Governors.
Crosby Steam Gage & Valve Co.
Dean Bros. Steam Pump Works.
Walworth Mfg. Co.

Purifying & Filtration Plants.
Dodge Mfg. Co.
Hungerford & Terry.
Norwood Engineering Co.
Scaife, W. B., & Sons.

Quillers.
Foster Machine Co.
Fayne, G. W., & Co.
Universal Winding Co.

Rag Pickers.
Schofield, Wm., Co.
Smith & Furbush Machine Co.

Ramie Tops and Noils.
Tierney, Frank A.

Raw Hide Gears.
New Process Raw Hide Co.

Reed and Harness Manufacturers.
American Supply Co.
Garland Mfg. Co.
Nuttall, George.
Stewart & Sons.
Walder, J.

Reducing Valves.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Regulators (Pressure).
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Ribbon Cutters.
Cameron Machine Co.

Ribbons.
Cheney Bros.

Ring Travelers.
DeHaven Mfg. Co.
Shaw, Victor, Ring Traveler Co.

Roofing.
Barrett Mfg. Co.
Standard Paint Co.

Roller Leather.
Jefferson, Edward & Brother.

Roll Coverers.
Burnham, E. E., & Co.

Rolls (Rubber Covered).
American Wringer Co.

Rope.
American Mfg. Co.
Dodge Mfg. Co.
Plymouth Cordage Co.

Rope Transmission.
American Mfg. Co.
Cresson, Geo. V., Company.
Dodge Mfg. Co.
Plymouth Cordage Co.

Roving Cans.
Hill, James, Mfg. Co.
Standard Fibre Co.

Rubber Rolls.
Boston Belting Co.

Ruberoid Roofing.
Standard Paint Co.

Scallop Machines.
Merrow Machine Co.

Schools.
International Correspondence Schools.
Lowell Textile School.
New Bedford Textile School.
Philadelphia Textile School.

Secondhand Machinery.
—See Mchry. Dealers, also classified Ads.

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leading foreign manufacturers and dealers and keep thoroughly up with the latest improvements in Textile Machines. We should be pleased to com-

Richards

municate with parties contemplating any additions or changes in mill equipments and to send circulars describing at length our machines and supplies.

& Co.

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8 CURRER STREET, BRADFORD, ENG.
PHILADELPHIA OFFICE, THE ARCADE
SOUTHERN OFFICE, CHARLOTTE, N. C.

Separators (Yarn).
Draper Co., The.

Sewing Machines and Supplies.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch Bros., Somerville Machine Wks.
Curtis & Marble Machine Co.
Dinsmore Mfg. Co.
Fales, L. F.
Textile Finishing Machinery Co.
Union Special Machine Co.
Walter & Co.
Willcox & Gibbs Sewing Machine Co.

Shafting, Hangers, Etc.
——See Power Transmission Machinery.

Shearing Machinery.
——See Dyeing, Drying, Bleaching and Finishing.

Sheet Metal Work.
Scaife, W. B., & Sons.

Shell Rolls.
Thurston, A. G., & Son.

Shoddies.
——See Wool Shoddies.

Shuttles.
——See Bobbins, Spools, Shuttles, Etc.

Silk Machinery.
Arlington Mch. Wks. (Arthur Birch, prop.)
Butterworth, H. W., Sons Co.
Leigh, Evan A.
Mason Machine Works.
Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.

Silk Mill Supplies.
Hall, I. A., & Co.

Silk Noils.
Fawcett, Hughes.

Singe Plates.
Arlington Mch. Wks. (Arthur Birch, prop.)
Butterworth, H. W., Sons Co.
Taunton, New Bedford Copper Co.
Textile Finishing Machinery Co.

Singeing Machines.
Arlington Mch. Wks. (Arthur Birch, prop.)
Butterworth, H. W., Sons Co.
Curtis & Marble Machine Co.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Smith, Drum & Co.
Stubbs, Joseph.
Textile Finishing Machinery Co.

Sizing, Starch and Gums.
American Diamalt Co.
Arabol Mfg. Co.
Consolidated Rendering Co.
Corn Products Refining Co.
Danker & Marston.
Stein, Hirsch & Co.
Vera Chemical Co.

Skylights.
Drouve, G., Co.

Slashers.
Leigh, Evan A.
Lowell Machine Shop.
Riley, C. E., Company.

Soaps.
Dobbins Soap Mfg. Co.
Nicetown Mfg. Co.
Zurn, O. F., Co.

Spindles.
Bamford & Smith.
Bodden, Wm. & Son, Ltd.
Buckley's, Benjamin, Sons.
Calder Machine Works.
Draper Company.
Easton-Burnham Co.
Hopkins Machine Works.
Jefferson, Edward & Brother.
Leigh, Evan A.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.
Vandegrift, Elias T.

Spindle Tubes.
Bamford & Smith.
Calder Machine Works.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.
Vandegrift, Elias T.

Spinning Rings.
Draper Company.
Howard & Bullough American Machine Co.
Whitinsville Spinning Ring Co.

Spinning Tubes.
Buckley's, Benjamin, Sons.
Jefferson, Edward & Brother.

Spools.
——See Bobbins, Spools, Shuttles, Etc.

Spoolers.
Draper Company.
Easton & Burnham Machine Co.
Lindsay, Hyde & Co.
Lowell Machine Shop.
Payne, George W., & Co.

Stacks.
Scaife, W. B., & Sons.

Steam Boilers.
Scaife, W. B., & Sons.

Steam Boiler Insurance.
Hartford Steam Boiler Inspection & Insurance Co.

Steam Engines.
American Blower Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Buffalo Forge Co.
Fishkill Landing Machine Co.
Olney & Warrin.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.

Steam Heating.
American Blower Co.
Mass. Fan Co.

Steam Jacket Kettles.
Badger, E. B., & Sons Co.

Steam Pumps.
Dean Bros. Steam Pump Works.
Goulds Manufacturing Co., The.
Olney & Warrin.
Walworth Mfg. Co.

Alphabetical Advertising Index, with page numbers, follows this list.

Steam Specialties.
Berry Engineering Co.
Buffalo Forge Co.
Butterworth, H. W., Sons Co.
Crosby Steam Gage & Valve Co.
Sargent's Sons, C. G., Corp.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.
Walworth Manufacturing Co.

Steam Traps.
American Blower Co.
Buffalo Forge Co.
Sturtevant, B. F., Co.
Walworth Mfg. Co.

Steel Frame Construction.
Scaife, W. B., & Sons.

Stencil Machines.
Bradley, A. J.

Stop Motion for Knitting Machines.
Boss Knitting Machine Works.
Ruth Machine Co.

Stop Motion for Looms.
——See Warp Stop Motions.

Superheaters, Foster.
Power Specialty Co.

Tanks and Towers.
Chicago Bridge & Iron Works.

Tanks, Tubs and Vats.
Cypress Lumber Co.
Hall, Ames H., Son & Co.
Hopkins Machine Works.
Textile Finishing Machinery Co.
Tolhurst Machine Works.
Scaife, W. B., & Sons.
Stearns, A. T., Lumber Co.
Woolford, G., Tank Mfg. Co.

Tapes, Braids and Edgings.
Beacon Narrow Fabric Co.
Chapin, George W.
Friedberger-Aaron Mfg. Co.
Kron & Fite Mfg. Co.
Maurer, F. W., & Sons Co.
Weimar Bros.
Wick Narrow Fabric Co.

Telephones.
Pettes & Randall Co.

Temples.
Draper Co.

Textile-Engineer.
Buhlmann, A. W.

Textile Schools.
——See Schools.

Thread Guide (Adjustable).
Palmer, I. E., Co.

Tiering Machines.
Economy Engineering Co.

Top Cutting Machines.
Robinhold Machine Co.
Wildman Mfg. Co.

Trade Mark Stamps.
Kaumagraph Co.

Trucks.
Bailey, Frank.

Turbines.
——See Water Wheels.

Twine.
American Mfg. Co.
Plymouth Cordage Co.
Richardson Bros.

Twisting Machinery.
Brockway & Meckenstrum.
Jefferson, Edward & Brother.
Lowell Machine Shop.
Smith & Furbush Machine Co.

Valves.
Crosby Steam Gage & Valve Co.
Jolly, J. & W.
Walworth Mfg. Co.

Variable Speed Transmission.
Cell Drier Machine Co.
Reeves Pulley Co.

Ventilating Apparatus.
American Moistening Co.
American Blower Co.
Berry, A. Hun.
Buffalo Forge Co.
Crocker-Wheeler Co.
Drouve, G., Co.
Massachusetts Fan Co.
Parks, G. M., Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Tolhurst Machine Works.
Sargent's, C. G., Sons.
Schnitzler, Chas. H.
Sturtevant, B. F., Co.
Walworth Mfg. Co.

Warp Compressors.
Worcester Warp Compressing Machine Co.

Warpers.
Draper Company.
Entwistle, T. C., Co.
Lowell Machine Shop.

Warping and Beaming Machinery.
Altemus, J. K.
Draper Company.
Entwistle, T. C., Co.
Smith & Furbush Machine Co.

Warp Drawing Machines (Automatic).
American Warp Drawing Machine Co.

Warp Stop Motions.
American Textile Appliances Co.
Draper Company.
Kip-Armstrong Co.

Washers (Cloth).
Arlington Mch. Works (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Works.
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., & Sons Co.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.
Philadelphia Drying Machinery Co.
Textile Finishing Machinery Co.

Washing Soda.
Ford, J. B., Co.

Watchman's Clocks.
Holtzer-Cabot Electric Co.
Nanz, T., Clock Co.
Pettes & Randall Co.

Water Chemists.
Scaife, W. B., & Sons Co.

Alphabetical Advertising Index, with page numbers, follows this list.

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Very Light Weight Cotton and Cotton and Silk Goods a Specialty.
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Dodge Mfg. Co.
Hungerford & Terry.
Northern Water Softener Co.
Scaife, W. B., & Sons Co.

Water Softeners.
Dodge Mfg. Co.
Ford, J. B., Co.
Hungerford & Terry.
Northern Water Softener Co.
Scaife, W. B., & Sons Co.

Water Towers.
Chicago Bridge & Iron Works.
Tippett & Wood.

Water Wheel Governors.
Woodward Governor Co.

Water Wheel Harness.
Dodge Mfg. Co.

Water Wheels.
Jolly, J. & W.
Risdon-Alcott Turbine Co.
Smith, S. Morgan, Co.

Winders (Cotton, Woolen and Worsted).
Altemus, J. K.
Easton & Burnham Machine Co.
Foster Machine Co.
Leigh, Evan A.
Lever, Oswald, Co.
Lindsay, Hyde & Co.
Lowell Machine Shop.
Payne, Geo. W., & Co.
Universal Winding Co.

Winders (Back).
Taylor, James.

Winders (Hosiery).
Altemus, Jacob K.
Easton & Burnham Machine Co.
Foster Machine Co.
Leighton Machine Co.
Lowell Machine Shop.
Payne, G. W., & Co.
Universal Winding Co.

Wood Preserving Paints.
Carbolineum Co.

Wood Pulleys.
Dodge Mfg. Co.
Seginaw Manufacturing Co.

Wool.
Schofield, Edwin F.
Stoddard, Haserick, Richards & Co.
Tierney, Frank A.

Wool Oil Compound.
Burckhardt & Co.
Danker & Marston.

Wool and Waste Dusters.
Jefferson, Edward & Brother.
Leigh, Evan A.
Sargent's, C. G., Sons.
Schofield, Wm., Co.
Smith & Furbush Machine Co.

Wool Cleaning Compound.
Ford, J. B., Co.

Wool Combing Machinery.
Crompton & Knowles Loom Works.
Jefferson, Edward & Brother.
Leigh, Evan A.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.

Woolen and Worsted Machinery.
Altemus, Jacob K.
American Tool & Machine Co.
Arlington Mch. Works (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Works.
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., Sons Co.
Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Fales, L. F.
Firth, William, Co.
Gessner, David.
Hood, R. H.
Hunter, Jas., Machine Co.
Jefferson, Ed., & Bro.
Kenyon, D. R., & Son.
Leigh, Evan A.
Lombard Machine Co.
Lowell Machine Shop.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Riley, C. E., Company.
Sargent's, C. G., Sons.
Schofield, Geo. L.
Schofield, William, Co.
Smith & Furbush Machine Co.
Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.
Whittle, James H., Co.
Woonsocket Machine & Press Co.
Worcester Warp Compressing Machine Co.

Wool Oils.
Borne, Scrymser Co.

Wool Shoddies.
Collings, Taylor & Co.
Slack, Wm. H. H., & Bro.

Wool Washing, Preparing and Drying Machinery.
Hunter, Jas., Machine Co.
Jefferson, Edward & Brother.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Riley, C. E., Company.
Sargent's, C. G., Sons.
Smith & Furbush Machine Co.
Stoddard, Haserick, Richards & Co.
Tolhurst Machine Works.

Wringers (Power).
American Wringer Co.

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Greene & Daniels Mfg. Co.
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Chapin, Geo. W.
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Ryle, Wm., & Co.
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Boyer, B. F., Co.
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Harding, Whitman & Co.
Littauer, Ludwig.
McCook, Walter.
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Salkeld, A. D., & Bro.
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Alphabetical Advertising Index, with page numbers, follows this list.

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Alphabetical Index to Advertisements.

Acme Steel Goods Co 50
Adams, A. L. 50
Adams, Joseph M., Co. 236
Almond, T. R., Mfg. Co. 48
Altemus, Jacob K. ..... —
Ament, H. B. 46
American Blower Co. 271
American Diamalt Co. 242
American Ferrofix Brazing Co... 36
American Mfg. Co. 59
American Moistening Co. 37
American Pulley Co., The 33
American School of Correspondence 239
American Supply Co. 50
American Textile Appliances Co. —
American Textile Specialty Machinery Co. 16
Am. Tool & Machine Co. 39
American Tool Works Co. 214
American Warp Drawing Machine Co. 20
American Wringer Co. 47
Arabol Mfg. Co., The 248
Arlington Machine Works 51
Ashworth Bros. 50
Atteaux, F. E., & Co. 249

Badische Company 60
Badger, E. B., & Sons Co. 36
Badger Fire Extinguisher Co. .. 36
Bailey, Frank 257
Ballou Yarn Co. 232
Bamford & Smith 271
Barlow, John W., Co. 214
Barrett Mfg. Co. ..... —
Beacon Narrow Fabric Co. 234
Beattie Machine Works 267
Bell Pure Air & Cooling Co. 53
Berlin Aniline Works 248
Berry, A. Hun 35
Berry Engineering Co. 46
Birch, Arthur 51
Birch Brothers 34-45
Birdsboro Steel Foundry & Machine Co. 37
Bischoff, C., & Co. 249
Blaisdell, Jr., Co., The S. 232
Bodden, Wm., & Son, Ltd. 37
Boomer & Boschert Press Co. .. 228
Borgner, Cyrus, Co. 48
Borne, Scrymser Co. 56
Boss Knitting Machine Works .. 262
Bosson & Lane 242
Boston Belting Co. 24
Boyer, B. F., Co. 234
Bradley, A. J. 217
Breedon's Son, Wm. 269
Brinton, H., & Co. 261
Broadbent, Thomas, & Sons 201
Brockway & Meckenstrum 45
Brophy's Sons, T. 244
Brown, W. H., Co. 48
Buckley's, Benj., Son 52
Buffalo Forge Co. 40
Bull, William C. 267
Burckhardt & Co. 228
Burnham, E. E., Co. 46
Butterworth, H. W., & Sons Co. 1

Calder Machine Works 48
Cameron Machine Co. 50
Campion, Richard 234
Cannon Mills 231
Carbolineum Wood Preserving Co. 41
Cassella Color Co. 247
Catlin & Co. 231
Cell Drier Machine Co.
Inside Back Cover
Chaffee Bros.' Company 51
Chapin, Geo. W. 237
Charles, William B. 236-238
Chemische Aniline Works 238
Cheney Bros. 237
Chicago Bridge & Iron Works .. 19
Claes & Flentje 264
Cling Surface Mfg. Co. 202
Cohoes Dyeing Co. 243
Consolidated H. S. & L. M. Co. 259
Consolidated Rendering Co. 51
Continental Latch Needle Co. .. 269
Cooper, Chas. 256
Corey, Wm., Co. 269
Corn Products Refining Co. 22
Cramer, Stuart W. 212
Crane Brothers 44
Crane Mfg. Co. 265
Crescent Machine Co. 217
Cresson, Geo. V., Co. 32
Crocker-Wheeler Co. 42
Crompton & Knowles Loom Works 62
Crosby & Gregory 215
Crosby Steam Gauge & Valve Mfg. Co. 228
Cross Creek Coal Co. 56-57
Curtis & Marble Machine Co. .. 45
Cypress Lumber Co. 249

Danker & Marston 202
Davidson, J. F. 244
Davis & Quick 210
Davis, W. M. 215
Dean Bros. Steam Pump Works 41
De Haven Mfg. Co. 43
Detroit Lubricator Co. 268
Dinsmore Mfg. Co. 35
Dixie Broom Co. 223
Dixon, Jos., Crucible Co. 44
Dobbins Soap Mfg. Co. 31
Dodge Mfg. Co. 25
Dodge Needle Co. 269
Draper Company 3
Driver, Sam 238
Drouve, The G., Co. 39
Dubied, Edouard, & Co. 268
Duncan & Youngs 233

Easton-Burnham Co. 30
Eaton Rapids Woolen Mills 234
Economy Engineering Co. 54
Eddy & Street 234
Elliott & Hall 52
Entwistle, T. C., Co. 45
Eureka Fire Hose Mfg. Co. 46
Evans Friction Cone Co. 46
Excelsior Knitting Machine Mfg. Co. 259
Excelsior Needle Co. 269

Farbenfabriken of Elberfeld Co. 246
Fairbairn - Lawson-Combe-Barbour, Ltd. 27
Fales, L. F. 42
Farrel Foundry & Machine Co. 28
Fawcett, Hughes 233
Felton, S. A., & Son Co. 47
Ferguson, John W. 215
Firth & Foster Co. 243
Firth, William, Co. 31
Fishkill Landing Machine Co. .. 47
Ford, J. B., Co. 224
Foster Machine Co.
Outside Back Cover
Friedberger-Aaron Mfg. Co. 252
Frontier Supply Co. 217

Gandy Belting Co. 241
Garland Mfg. Co. 40
Geisenheimer & Co. 248
General Electric Co. 21
Gerry, W. Geo., & Son ..... —
Gessner, David 207
Gilbreth, Frank B. ..... —
Ginsberg, A., & Son 49
Globe Dye Works Co. 244
Gormley, Robert W., & Co. 262
Goulds Mfg. Co. 271
Grant Yarn Co. 232
Greene & Daniels Mfg. Co. 230
Grosser Knitting Machine Co. .. 255

Haedrich, E. M. 249
Hall, Amos H., Son & Co. 250
Hall, I. A., & Co. 46
Halton's, Thomas, Sons 39
Harding & Fancourt 216
Harding, Whitman & Co. 231
Hart, Chas. 249
Hartford Steam Boiler Inspection & Insurance Co. 46
Heathcote, John, & Son 40
Hemphill Mfg. Co. 263
Hepworth, John W., & Co. 264
Hill, James, Mfg. Co. 45
Hoffman, Dewitt & McDonough 232
Holtzer-Cabot Electric Co. 51
Home Bleach & Dye Works 243
Home Insurance Co. 240
Hood, R. H. 48
Hopkins Machine Works 27
Howard & Bullough Am. Machine Co. 64
Howe Mill Crayon Co. 233
Howson & Howson 215
Hungerford & Terry 48
Hunter, Jas., Machine Co. 15
Hyde, Edward S. 236

India Alkali Works 267
Industrial Law League 215
International Correspondence Schools 217
Ives, L. T., Co. 269

Jefferson, Edw., & Bro. 49
Jenckes, E., Mfg. Co. 260
Jenckes Spinning Co. 232
Johnson, Chas. A., & Co. 249
Jolly, J. & W. 270
Jones, Lewis 269

Kalle & Co. 249
Kaumagraph Company 42
Kenyon, D. R., & Son 29
Keystone Latch Needle Co. 269
Kilburn, Lincoln & Co. 49
Kip-Armstrong Company ..... —
Kitson Machine Shop 7
Klauder-Weldon Dyeing Machine Co., The 222
Klipstein, A., & Co. 245
Krout & Fite Mfg. Co. 234

Lamb Knitting Machine Co. 267
Lamb, J. K., Textile Mach. Co. 49
Lane, W. T., & Bro. 38
Leigh, Evan Arthur 11
Leighton Machine Co. 261
Lestershire Spool & Bobbin Co. 41
Lever Oswald Co. 17
Leyland, Thomas, & Co. 28
Lindsay, Hyde & Co. 232
Littauer, Ludwig 231
Little, Arthur D. 211
Lombard Machine Co.
Outside Back Cover
Lorimer's, Wm. H., Sons Co. 244
Lowell Crayon Co. 232
Lowell Machine Shop 2
Lowell Textile School ..... —

Mason Brush Works 52
Mason Machine Works 10
Massachusetts Fan Co. 267
Maurer, F. W., & Sons Co. 232
Mayo Knitting Machine & Needle Co. 262
Mayo, Geo. D., Machine Co. 266
McCook, Walter 234
Merrow Machine Co. 258
Merwin Paper Co. 230
Metallic Drawing Roll Co. 45
Metz, H. A., & Co. 246
Minnich Machine Works 40
Mitchell, Jas. E., Co. 231
Montgomery, J. R., Co. 230
Monument Mills 230
Moore, C., & Co. 231
Moore, J. Clifford & Co. 216
Murphey, E. W., & Co. 50
Murphy Iron Works 33

Nanz, E., Clock Co. 47
National Automatic Knitter Co. 262
National Brake & Clutch Co. ... 53
New Bedford Textile School 44
New England Butt Co. 43
New Process Raw Hide Co. 14
New York Silk Conditioning Works 232
New York & New Jersey Lubricant Co. 236
Nicetown Mfg. Co. 249
Northern Water Softener Co. ... 32
Norwood Engineering Co. 241
Nuttall, George 52
Nye & Tredick Company 266

Olney & Warrin 35
Olsen, Chas. E. A. 54
Orswell Mills 232

Page Needle Co. 269
Palmer, I. E., Co. 55
Parks, G. M., Co. 55
Pawtucket Dyeing & Bleaching Co. 244
Paxton & O'Neill 265
Payne, Geo. W., & Co. 264
Pearson, J. T. 268
Peerless Company, The 244
Pettes & Randall Co. 268
Pettingell-Andrews Co. 207
Philadelphia Drying Mchy. Co... 26
Philadelphia Textile Mchy. Co... 272
Philadelphia Textile School 241
Plymouth Cordage Co. 226
Pocasset Worsted Co. 234
Power Specialty Co. 51
Pratt, Robt. G. 49
Providence Machine Co. 34
Puffer, W. L. 215

Reeves Pulley Co. 26
Renold Silent Chain 217
Rhoads, J. E., & Sons 233
Rhode Island Fiber Spool Co. .. 13
Richardson Bros. 243
Riley, C. E., Company 201
Risdon-Alcott Turbine Co. 270
Robinhold Machine Co. 267
Roessler & Hasslacher Chemical Co. 247
Root, C. J., Co. 12
Rowland, Samuel 244
Ruth Machine Co. 265
Ryle, William, & Co. 237

Saco & Pettee Machine Shops .. 5
Saginaw Mfg. Co. 48
Salem Elevator Works 38
Salkeld, A. D., & Bro. 231
Sargent's, C. G., Sons 29-49
Sauquoit Silk Mfg. Co. 237
Scaife, W. B., & Sons 268
Schnitzler, Chas. H. 267
Schofield, Edwin F. 236
Schofield, Geo. L. 44
Schofield, William, Co. 49
Schwartz, L. H. A. & Co. ..... —
Scott & Williams 8
Sellers, Wm., & Co. 33
Shaw, Victor, Ring Traveler Co. 50
Shultz Belting Co. 30
Simpson Bros.' Corporation 44
Slack, Wm. H. H., & Bro. 238
Smith, Drum & Co. ..... —
Smith, S. Morgan Co. 270
Smith & Furbush Machine Co... 272
Solway Dyeing & Textile Co. ... 244
Spence & Rideout 265
Stafford Co., The 4
Stafford & Holt 260
Standard Fiber Co. 43
Standard Machine Co. 263
Standard Paint Co. 209
Stearns, A. T., Lumber Co. 250
Stein, Hirsh & Co. 248
Stephenson & Co. 234
Stephenson Mfg. Co. 44
Sternberg, Fred., & Co. 231
Stewart & Sons 52
Stoddard, Haserick, Richards & Co. 209
Stubbs, Joseph 31
Sturtevant, B. F., Co. 205
Sullivan Machinery Co. 49
Swoyer, J. D. 234
Sykes, Walter F., & Co. 248

Taunton-New Bedford Copper Co. 268
Taylor, Jas. 258
Tebbetts, E. L., & Co. 51
Textile Machinery Co. 48
Textile Machine Works 52
Textile Finishing Machinery Co. Inside Front Cover
Thayer, Edward M., & Co. 248
Thurston, A. G., & Son 52
Tierney, Frank A. 233
Tippett & Wood Outside Back Cover
Tolhurst Machine Works 38
Tompkins Bros. Co. 163
Toohey, M. J., & Co. 230

Union Special Machine Co. 257
Universal Winding Co. 9
Utica Willowvale Bleaching Co. 228

Vacuum Dyeing Machine Co. ... 250
Vandegrift, Elias T. 46
Vera Chemical Co. 54
Vial, Pierre 215

Walder, J. 47
Walther, Otto 253
Walworth Manufacturing Co. Outside Back Cover
Wardwell Needle Co. 269
Waters, D. F. 41
Weimar Bros. 227
Western Thread & Dye Works.. 243
Westinghouse Electric & Mfg. Co. 30
Whitin Machine Works 6
Whittle, James H., Co. 42
Whitinsville Spinning Ring Co.: 43
Whiton, D. E., Machine Co. 47
Wick Narrow Fabric Co. 23
Wildman Mfg. Co. 254
Willcox & Gibbs Sewing Machine Co. 251
Wilson & Co., Barnsley, Ltd. ... 34
Woodward Governor Co. 271
Woolford, G., Wood Tank Mfg. Co. 250
Woonsocket Mach. & Press Co. 18
Wright, Robt. A. 215

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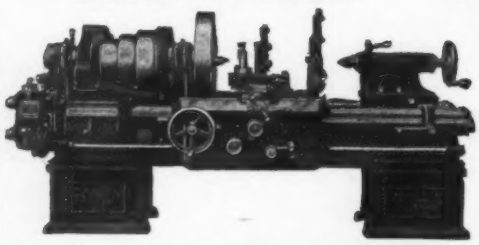

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Superintendent of Knitting Mill. Position wanted by a man 26 years of age, married, American. Is experienced on men's overshirts, balbriggan ribbed goods, fleece and novelties, and is familiar with all kinds of knitting machinery. Good references. 3637, Textile World Record, Boston, Mass.

Superintendent or Assistant Superintendent in a cotton warp or thread mill. 28 years of age, married. Worked on all kinds of glazed thread, all numbers, also cotton warps of all kinds. Familiar with all kinds of machinery. Will go any place for a good position. Good reference. 4557, Textile World Record, Boston, Mass.

Superintendent of a Cotton Mill. Would consider a position as overseer of weaving or carding. Position wanted by a man 47 years of age, American, married. Worked on plain and fancy white cotton goods, both coarse and fine. Has held the position as superintendent in a number of mills. First class reference. 3821, Textile World Record, Boston, Mass.

Cotton Superintendent. Has been boss carder, ring spinner and comber on all kinds of cotton yarns, hosiery yarn a specialty. First-class references. Age 44; married. 3026, Textile World Record.

Superintendent Worsted or woolen mill, designer, or both. Position wanted by a man 44 years of age, English. Worked on meltons, beavers, uniform goods, tweeds, worsteds, both men and women's wear, coverts and rain cloth. Understands worsted and woolen machinery. Good references. Will not go West or Canada. Will take a position at short notice. 3938, Textile World Record.

Asst. Supt, or Overseer of Dressing. Position wanted by a man 30 years of age, married and American. Has worked on fancy cotton, woolens and worsteds, and all kinds of high and low grade goods. Is familiar with all kinds of woolen and cotton machinery. Good references. 3537, Textile World Record.

Superintendent or Assistant of a woolen or worsted yarn mill. Worked on fancy and piece dye worsteds, men's wear, thibets and overcoatings. Has a good knowledge of blending stock, also a good knowledge of designing. Familiar with all makes of woolen and worsted machinery, American and foreign. 26 years of age, married. Good reference. 4593, Textile World Record, Boston, Mass.

Superintendent of a Woolen, cloth or yarn mill. Might consider a good position as overseer of carding. Worked on all kinds of woolen goods, yarns made from wool, cotton and shoddy mixes. Understands all makes of carding machinery. 44 years of age, married. Good reference. 4613, Textie World Record, Boston, Mass.

Superintendent of a Woolen Yarn Mill. Familiar with all kinds of yarn, wool, shoddy and cotton mixes. Good knowledge of buying stock and experienced in dyeing yarns in stock. 33 years of age, Scotch. Good reference. 4604, Textile World Record, Boston, Mass.

SUPERINTENDENTS.

Superintendent of silk or cotton mill that manufactures worsted, silk plushes, terry stripes, light and heavy weight mohair pile figure upholstery plushes. Understands Jacquard and Clipper looms. Good reference. 49 years of age, married. 4668, Textile World Record, Boston, Mass.

Superintendent in an Underwear Mill. 35 years of age, married, American. Worked on all grades of men's, women's and children's ribbed underwear. First-class reference. Understands sewing machines. Will not go South or Canada. 3505, Textile World Record, Boston, Mass.

Superintendency, or overseer and designer of cotton and raw silk mill, wanted by a practical man 31 years of age, who understands the business thoroughly. Had 15 years' experience here and in Germany and 2 years textile school. Best of references given. 3927, Textile World Record, Boston.

Superintendent of a Woolen Mill, wool, cotton or wool waste buyer. 42 years of age, married. Worked on woolens, plain and fancy, also worsteds. Will go anywhere for a good position. Good reference. 4587, Textile World Record, Boston, Mass.

Superintendent or Overseer of Weaving in a cotton mill. Position wanted by a man 46 years of age, married, American. Worked on colored and white goods, both fancy and plain. Familiar with Crompton, dobby and box looms; Knowles' dobby and box looms; Mason dobby and box; Whitin and several others. Good references. 4023 Textile World Record.

Assistant Superintendent or Superintendent of a woolen mill, or in commission house. Position wanted by a man 29 years of age, married, American. Worked on all kinds of woolen goods. Familiar with all kinds of machinery. Good references. 4025 Textile World Record.

Cotton Superintendent of a yarn mill. Familiar with all kinds of yarns, from 20s to 120s. Used to all kinds of American and English machinery. Age 39, married; first-class references. 1364, Textile World Record.

Superintendent or Agent of a Cotton Mill. Position wanted by a man 47 years of age, married, American. Worked on all kinds of cotton goods and yarns. Familiar with all kinds of machinery. Good references. 4033, Textile World Record, Boston.

Superintendent of Cotton Mill, or overseer of cotton weaving. Position wanted by a man 38 years of age, married, American. Worked on shirtings, sateens, dress goods, satin and Marseilles quilts. Familiar with Crompton, Knowles, Whitin and English looms; Lowell frames; Saco & Pettee cards. Good references. 4031 Textile World Record.

Superintendent or Assistant Superintendent of a cotton mill. 44 years of age, married. Has worked on ginghams, shirtings, fancy dress goods, turkey red, damask, cotton warp and fancy yarns for woolen mills. 23 years of practical experience and is familiar with all kinds of machinery used in the manufacture of the above goods. Will not go West or South. Good reference. 4501, Textile World Record, Boston.

Superintendent of a Cotton, Cloth or Yarn Mill. Position wanted by a man, 39 years of age, American, married. Is familiar with cotton hosiery and warp yarns, single or two-ply. Is at present employed as superintendent of a cotton yarn mill, but wishes to change for advancement. Strictly temperate and industrious and can furnish the very best of references. 3853, Textile World Record, Boston.

KNITTERS.

Overseer of Knitting or second hand on latch needle machines. Worked on ladies' Swiss ribbed vests, ladies' shaped vests and men's derby ribbed underwear. Familiar with Lamb, Scott & Williams and Wildman machines. Will not go West or South. Good reference. 21 years of age, single. 4666, Textile World Record, Boston, Mass.

Overseer of Knitting or assistant superintendent in a hosiery mill. Worked on all classes of seamless hosiery from coarse wool and cotton to fine cassimeres and lisle. Familiar with Mayo, Victor, Electric, Campbell, Scott & Williams, 3/4 automatic, Brinton, 3/4 and full automatic and different makes of ribbers and loopers. Prefers a position in Massachusetts. 28 years of age, married. Good reference. 4650, Textile World Record, Boston, Mass.

Overseer of Knitting or machine fixing. Position wanted by a married man, 33 years of age, American. Worked on all kinds of up-to-date hosiery. Familiar with ribbers, Wildman, Brenton, Hepworth and Branson machines. Prefers N. E. States. Could take a position at once. 4568, Textile World Record, Boston, Mass.

Overseer of Knitting. Position wanted by a man 46 years of age. Worked on all makes of flat knitting machines, Rashel double ribbed machines and spring needle. Worked on sweaters, jackets, gloves, mittens and shawls. Good reference. 4570 Textile World Record, Boston, Mass.

Overseer of Underwear Knitting. Position wanted by a man 28 years of age, married, American. Worked on 20 to 22 gauge fleece-lined underwear and 24 gauge Balbriggan. Familiar with Tompkins Spring needle machines only. Good references. 4006 Textile World Record.

Superintendent of a Hosiery Mill. Position wanted by a man 49 years of age, American. Worked on all kinds of wool, worsted and cotton hosiery. Familiar with all kinds of machinery. Good references. 3075 Textile World Record.

Overseer Knitting or Fixing. Position wanted by a man 34 years of age, single; has worked on plain and ribbed goods on Cooper and Wildman machines. Good references. 4084, Textile World Record, Boston, Mass.

Woolen Boss Spinner, or would accept a good secondhand position. Familiar with all kinds of American spinning machinery; Davis & Furber, Johnson & Bassett, English mules, Curtis and Platt. First-class references; age 48; English. Could take a position at once. 589, Textile World Record.

Overseer of Worsted Spinning and twisting. Position wanted by a man, 32 years of age, single, English. Worked on all kinds of carpet and hosiery yarn and has been overseer in leading mills in England, Scotland and United States. Familiar with all kinds of worsted spinning machinery. Good reference. 3808, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man 46 years of age, Scotch. Has worked on all kinds of stock, also hosiery yarn. Familiar with D. & F., J. & B. and English pawl mules. Could take position at once. Good references. 3912, Textile World Record, Boston.

Overseer of Cotton Spinning. Englishman with experience on mule and frame spinning; worked on 3 1/2 to 200s filling, and on all kinds of novelty yarns, white or colored; accustomed to all machinery used in this work; wants a position in the States. 3437, Textile World Record.

Overseer of Frame or mule spinning and twisting. Position wanted by a man 46 years of age, married and American. Has worked on sateens, twills, 30 warp, 46 filling yarns from 3s to 150s. Is familiar with all makes of spinning and twisting machinery. Good references. 3582, Textile World Record, Boston, Mass.

Overseer of ring spinning, spooling and warping. Position wanted by a man 32 years of age, American. Has worked on denims, plaids, awnings, checks, lawns, sheetings, lenos, shirtings, etc. Is familiar with Mason, Whitin, Lowell, Davis & Furber and Fales & Jenks, spinning machinery. Good references. 3604, Textile World Record. Boston, Mass.

SPINNERS.

Overseer of Drawing and Spinning in a worsted yarn mill. Over 20 years' experience on fine, medium and coarse wools, also mohair and alpaca. Has been employed in large worsted mills in the United States. Understands all makes of machinery. Good reference. 45 years of age, married. 4656, Textile World Record, Boston, Mass.

Second Hand in a Woolen Spinning Room. Position wanted by a young man 30 years of age, single, has had a number of years' experience as spinner and has been allowed to fix his own machines. Would like to get a position as second hand where he could learn to fix mules under a good man. He is familiar with D. & F. or J. & B. machines, and wants a position in the West or Middle West. 3707, Textile World Record.

Boss Spinner in woolen mill. Worked on all kinds of woolen, cotton and shoddy mixed goods. Familiar with Johnson & Bassett. Would prefer Furbush mules. First-class recommendations; age 29; American. 3287, Textile World Record.

Overseer of Woolen Spinning or carding and spinning in a small mill. Married man, 38 years of age. Has worked on all kinds of woolen, cotton and shoddy mixed goods, yarns from 1/2 to 8 run. Familiar with all makes of American and English carding and spinning machinery. Will go any place for a good position. Good reference. 4502, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man, 48 years of age, American, married. Worked on all kinds of yarn from 1/2 to 10 run, all kinds of stock, wool, cotton and shoddy mixes. Familiar with J. & B., D. & F., Parr, Curtiss, Bideford, Pault Pavercroft mules. Will not go West or South. Good reference. 3810, Textile World Record, Boston, Mass.

Overseer of Spinning or twisting. 38 years of age. Has had a wide experience in the manufacture of linen threads and yarns, both wet and dry spinning. Familiar with all classes of twisting and carding machines and preparing. First class recommendations from leading firms. 4528, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man, 55 years of age, American, married. Familiar with J. & B. mules. Good reference. 3797, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a married man 44 years of age. Worked on all kind of yarns on Platt mules, D. & F. J. & B. and Tatham machines. First class reference. Could take position at short notice. Will not go South, West or Canada. 4076, Textile World Record, Boston, Mass.

Overseer Woolen Spinning. Position wanted by a man 45 years of age, married, worked on woolen goods made of wool shoddy and cotton mixes; good references; take position at short notice. 4044. Textile World Record, Boston.

Overseer of Woolen Spinning. Position wanted by a man 40 years of age, widower, worked on all kinds of yarns, wool, cotton and shoddy mixed. Familiar with the J. & B. and D. & F. machines. First class recommendations. 3720, Textile World Record.

Overseer of Spinning or carder and spinner in a small woolen mill. Position wanted by a man 55 years of age, married, American. Has worked on all kinds of wool, shoddy and cotton mixes, yarns from 1/2 to 10 run. Familiar with D. & F., J. & B., Whitley, Smith & Molton mules. Good reference. Will not go South or Pennsylvania. 3933, Textile World Record.

Overseer of Ring Spinning, spooling, warping and twisting. Position wanted by a married man 28 years of age. Worked on suitings, checks, plaids, tickings, awnings, stripes and denims. Familiar with Whitin, Mason, Lowell, Fales & Jenks spinning frames, Draper spoolers and warpers, new Whitin spoolers and Fales & Jenks and Whitin twisters. Will not go to Penn. or Canada. Good reference. 4563, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Familiar with the D. & F. machines. Worked on all kinds of stock, wool, cotton and shoddy mixes. Would prefer a position in the N. E. States. Good reference. 34 years of age, married. 4598, Textile World Record, Boston, Mass.

WEAVERS.

Overseer of Weaving, second hand in the finishing department or cloth inspector. Worked on all classes of woolen goods and understands all makes of finishing machinery. Prefers N. E. States. 39 years of age, married. Good reference. 4655, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. 38 years of age, married. Worked on cotton dress goods, white and colored, lenos, ginghams, sateens, tickings, cottonades and cassimeres. Familiar with the Crompton & Knowles, Lowell, Kilburn, Mason, jacquard and English revolving box looms. Good reference. 4578, Textile World Record, Boston, Mass.

Overseer of Weaving. Position wanted by a man 39 years of age, American. Has worked on unions, cassimeres, shirtings and overcoatings. Is familiar with Crompton & Knowles looms. Good references. 3601, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. A married man, 32 years of age, American. Worked on plain and fancy sateens and jacquard effects. Also all kinds of cotton cloths, particularly fine goods and silks. Familiar with the Draper, Whitin, Colvin and jacquard looms. Good reference. 4516, Textile World Record. Boston, Mass.

Overseer of Cotton Weaving. Worked on lenos, checks, plaids, fancy stripes, drop box and plain looms. First-class references. Will not go West or to Canada. Age 36, English. First-class references. 1855, Textile World Record.

Overseer of Cotton Weaving. 47 years of age. Worked on ducks, lawns, stripes, plaids and all kinds of twilled cotton goods. Familiar with Draper, Lowell, Whitin, Crompton & Knowles looms. Will go any place for a good position. Good reference. 4510, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. 39 years of age, married, American. Has worked on automobile tire fabrics, oils and sugar refining fabrics and all heavy duck goods and also plain goods. Familiar with the Crompton & Knowles, Lowell, Whitin and Draper looms. Will go any place for a good position. 4505, Textile World Record, Boston, Mass.

Overseer of Weaving. Familiar with shirtings, sheetings, lawns, cambric, ginghams, checks and stripes, union goods, awnings, ducks, drills, light and heavy weight, plain and fancy flannels. 39 years of age, American, first-class references. 3261, Textile World Record, Boston, Mass.

Overseer of Weaving or dressing in a woolen mill. 40 years of age, married. Worked on fancy cassimeres, worsteds, cheviots, worsted piece dyes, ladies' dress goods and blankets. Familiar with the Crompton & Knowles looms. Will not go West, South or Canada. Good reference. 4589, Textile World Record, Boston, Mass.

Overseer of Weaving in a woolen mill. Position wanted by a man 51 years of age, married, American. Worked mostly on ladies' dress goods. Familiar with Knowles looms. New England only. Good references. 4007 Textile World Record.

Overseer of Weaving in a woolen mill. Position wanted by a man 37 years of age, married, American. Worked on beavers, kerseys and worsteds. Familiar with Crompton & Knowles looms. Good references. Could accept a position at once. 4000 Textile World Record.

Overseer of Weaving in a woolen mill. Position wanted by a man 35 years of age, single, American. Worked on all kinds of woolens and worsteds. Familiar with Crompton & Knowles looms. Will go anywhere for good position. Good references. 4020 Textile World Record.

Overseer of Weaving. Worked on worsteds, cassimeres, dress goods, and all kinds of woolen goods. Crompton & Knowles looms. First-class references; American; 45 years of age. 3262, Textile World Record.

Overseer of Weaving. Position wanted by a man, 40 years of age, married, an American. Worked on cheviots, ladies' dress goods, janes and woolen goods of all kinds. Familiar with the Crompton & Knowles looms. Good recommendations. 3725, Textile World Record, Boston, Mass.

DESIGNERS.

Designer, Assistant Superintendent or superintendent in a small woolen or worsted mill. Worked on medium and high grade men's wear, woolens and worsteds; woolens as low as 60c. per yard and worsteds as high as $3.00 per yard. Understands all makes of machinery. Prefers New England. 31 years of age, married. Good reference. 4669, Textile World Record, Boston, Mass.

Designer. Worked on all kinds of woolen goods. 36 years of age, married. Good reference. 4664, Textile World Record, Boston, Mass.

Overseer of Knitting in a small or second hand in a large knitting mill, on all makes of underwear. Familiar with the Wildman, Stafford & Holt, Campbell and more particularly Crane circular machines. 22 years of age, single. Good reference. 4619, Textile World Record, Boston, Mass.

Overseer of Knitting on spring or latch needle machines. Worked on balbriggans, all gauges, flat and plaited work and fleece lined. Familiar with the Tompkins, Campbell & Clute, Cooper spring needle, Stafford & Holt, Leighton, Scott & Williams, McMichael & Wildman, and Nye & Tredick machines. Good reference. 3050, Textile World Record, Boston, Mass.

Overseer of Knitting in a small mill or fixer on latch needle machines in a large mill. Worked on all kinds of seamless hosiery, wool and worsted. Some experience on cotton. Familiar with the Geo. D. Mayo, Excelsior, Invincible and some experience on loopers. Good reference. 4607, Textile World Record, Boston, Mass.

Manager or Superintendent of a knitting mill. 46 years of age, married. Has manufactured all classes of underwear, both spring and latch needle. Familiar with all makes of machines. Good reference. 3646, Textile World Record, Boston, Mass.

Overseer of Knitting. Position wanted by a man 30 years of age, single. Worked on fine and heavy weight union suits. Familiar with Crane's rib circular machines. Good references. Will not go to Canada. 3946, Textile World Record.

Designer on Jacquard Work. 36 years of age, married. Worked on brocades, fancy stripes, silk, worsted and cotton goods. Could take a position at once. Will not go West, South, or Canada. 4535, Textile World Record, Boston, Mass.

Assistant Designer or assistant chemist in a silk or cotton mill. 22 years of age, a graduate of a textile school. Has never held a responsible position in this country. Would accept reasonable wages in order to get a start. Has a diploma from school. 4542, Textile World Record, Boston, Mass.

Assistant Designer. 27 years of age. Worked on suitings, cassimeres, overcoatings, etc. Familiar with Knowles looms. Wants a position in the N. E. States. Good reference. 4536, Textile World Record, Boston, Mass.

Designer, assistant designer or assistant superintendent. German. Woolen and worsted men's wear and ladies' dress goods. Experienced in Germany and a short time in this country. 3166, Textile World Record.

Designer in Worsted or woolen mill. Worked on woolen and worsted goods of all kinds. Good reference. Will go any place for a position. 26 years of age, single, German. 4601, Textile World Record, Boston, Mass.

Designer or Superintendent. 31 years of age, English. Worked on all kinds of woolen and worsted men's and women's wear. Familiar with the English and American looms. Good reference. 4556, Textile World Record, Boston, Mass.

Superintendent and Designer or boss weaver in a woolen mill. 48 years of age, married, American. Has had several years of experience on fancy cassimeres, kerseys, meltons and dress goods. Could take a position at once. 4537, Textile World Record, Boston, Mass.

Assistant Superintendent and Designer in a woolen mill. Englishman, 37 years of age, single. Has worked on all kinds of fancy and plain worsted and woolen goods, both high and low grade; serges, venetians, tennis goods, cheviots, cassimeres, suitings, shirtings and indigos. Understands all makes of machinery. Will not go South or Canada. Could take a position at once. Good reference. 4095, Textile World Record, Boston, Mass.

CARDERS.

Overseer of Woolen Carding. Worked on wool shoddy and cotton mixes, on English and American cards. 36 years of age, married. Good reference. 4662, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Worked on all kinds of woolen goods made from wool, shoddy and cotton mixes from the highest to the lowest. Familiar with all makes of cards; 50 years of age; married. 3695, Textile World Record, Boston, Mass.

Overseer of Carding in a woolen mill, or carder and spinner. Position wanted by a man 34 years of age, single, American. Worked on all grades of woolen, shoddy and cotton, from 1/2 to 6 1/4 run. Familiar with all makes of cards and condensers, D. & F. and Furbush mules. Will not go to Canada, or to Western or Southern States. Good references. Could accept a position at short notice. 3952, Textile World Record.

Overseer of Carding in cotton mill. Position wanted by a man 39 years of age, single. Worked on all kinds of cotton goods, Sea Island, combed and carded, from 24s up to 150s. Familiar with American and English carding machinery. Good references. 3941, Textile World Record.

Overseer of Carding or Spinning in a cotton mill. Position wanted by a man 39 years of age, married, American. Worked on white and colored goods. Familiar with Whitin and Lowell machines. Will not go to Canada, New York, New Jersey or New England States. Good references. 3997 Textile World Record.

Overseer of Carding in a knitting, woolen or shoddy mill. Position wanted by a man 33 years of age, married, American. Worked on wool, cotton and extract shoddies, dress goods, overcoatings, cassimeres, etc. Familiar with all kinds of carding machines, also J. & B., D. & F. and Bridesburg mules. Will not go to Maine, New Hampshire, Vermont, Massachusetts or Canada. Good references. 4017 Textile World Record.

Overseer of Carding and Frame Spinning. Worked on all kinds of stock, both high and low. 30 years of age; first-class recommendations. 1759, Textile World Record.

Second Hand in Wool Card Room. Position wanted by a married man, 26 years of age. Has worked on all kinds of woolen goods. Is familiar with D. & F. and Lombard cards. Wants a position in the N. E. States only. Good reference. 4082, Textile World Record, Boston, Mass.

Overseer of Carding. American with experience. wants first-class position. Worked on nearly all classes of woolen goods and on machinery used in woolen card room. Best of references. Wants position in the North. $4.00 per day. 3361, Textile World Record, Boston.

Overseer of Cotton Carding. American; 34 years of age; worked on all classes of cotton goods and all machinery used in this work. Would accept a good second hand position. Prefers position in the East. 3393, Textile World Record.

Overseer of Woolen Carding and spinning. Position wanted by a man 42 years of age, American, married. Worked on all kinds of stock, wool, cotton and shoddy mixes, yarns from 1/2 to 6 run. Familiar with all kinds of cards and J. & B. mules. Good reference. Could accept a position at once. 3822, Textile World Record, Boston, Mass.

Overseer of Cotton Carding. 50 years of age, married. Worked on white and colored cotton goods. Has had 25 years of experience as overseer. Good reference. Prefers a position in the New England states. 4515, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man 32 years of age, American, married. Worked on all kinds of woolen goods, both high and low grades and hosiery. Familiar with American and English carding machinery. Good references. 3883, Textile World Record.

Overseer of Woolen Carding. Position wanted by a man 53 years of age, American, married. Worked on American and English carding machines, and familiar with all kinds of stock, cotton, wool, and shoddy mixes. Could take position within one week's notice. Good references. 3890, Textile World Record.

FINISHERS.

Overseer of Finishing, overseer of burling and sewing or finished percher. 30 years of age, married. Worked on wool and worsted piece dyes. Familiar with all makes of finishing machinery. Good reference. 4588, Textile World Record, Boston, Mass.

Overseer of Finishing in a Hosiery Mill, or Superintendent in a small mill where superintendent would have charge of dyeing and finishing in addition to his other work. 37 years old, married; has worked on infants', misses', ladies' and men's hosiery, seamless and full fashioned, cotton, wool and mixtures. Is familiar with all kinds of finishing machinery. Good reference. 4099, Textile World Record, Boston, Mass.

Overseer of Finishing in Woolen Mill. Position wanted by a man 41 years of age, married, American, finished cassimeres, fancy and cotton worsteds, beavers, meltons, dress goods, first class reference. Can take position at once. 3706, Textile World Record.

Superintendent or Overseer of Finishing. Position wanted by a man 36 years of age, married, Swede. Has worked on all kinds of underwear, ladies', gentlemen's and children's. Is familiar with all kinds of finishing machinery. Good references. 3674, Textile World Record, Boston, Mass.

Overseer of Finishing. Worked on all kinds of woolen and worsted goods. Familiar with all makes of finishing machinery. Will go any place for a good position. Now employed but could leave at reasonable notice. Good reference. 3046, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing. Position wanted by a married man, 50 years of age. Has had a wide experience in leading mills on all classes of woolen and worsted goods. Is an expert on broad cloths or kerseys. Good reference. Could take a position at once. 4527, Textile World Record, Boston, Mass.

Overseer Boarding and finishing hosiery. All kinds of men's, women's and children's hosiery, except silk; age 41;; American; married. Can furnish references. 3035, Textile World Record.

Overseer of Woolen Finishing. Position wanted by a man 40 years of age, married. Worked on woolen goods, cotton warps, cotton mixtures and a variety of woolen goods. Familiar with all kinds of machinery used in the finishing department. Good reference. 4562, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing from loom to case. 50 years of age, married. Worked on all kinds of worsted and woolen goods, particularly face finished high lustre woolens. Familiar with all kinds of finishing machinery. Will not go West, South or Canada. Good reference. 4564, Textile World Record, Boston, Mass.

Overseer of Bleaching, Starching or Finishing. 26 years of age, single. Worked on drills, twills, sateens, cords, sheetings, shirtings, ducks, towels, mulls, cambrics and muslins, in fact all kinds of cotton goods. Familiar with all kinds of machinery used in handling these goods. Good reference. 4513, Textile World Record, Boston, Mass.

Boss Finisher. Position wanted by a man 47 years of age, American, married. Has worked on worsteds, cotton worsteds, kerseys, dress goods, etc. Is familiar with all American machinery and some English, such as shears and gigs. First-class references. Would prefer a position in New Jersey or Philadelphia. 3924, Textile World Record, Boston.

Overseer of Cotton Finishing or superintendent of bleach and dye works. Position wanted by a man, 42 years of age, American, married. Has worked on lawns, lenos, shirtings, sateens, flannels, in fact all kinds of cotton goods except back filled goods. Familiar with American and English machinery. Good references. 3852, Textile World Record, Boston.

Overseer of Cotton Finishing and napping. Position wanted by a man, 34 years of age, Irish, single. Has worked on domets, sheetings, all weights and widths, flannels, blankets, double felts, duckings, drillings and shirtings. Familiar with all kinds of finishing machines used in the finishing of these goods. Good reference. 3772, Textile World Record, Boston.

DYERS.

Overseer of Dyeing. Worked on worsted, wool, slubbing, piece dyes and some union stock. Good reference. 33 years of age, married. 4663, Textile World Record, Boston, Mass.

Overseer of Dyeing, mercerizing or finishing or superintendent of a bleach and dye works. Worked on cotton and wool piece dyes, skein dyeing and warps; also raw stock. Good reference. 34 years of age, married. 4647, Textile World Record, Boston, Mass.

Overseer of Dyeing. Worked on all classes of woolen goods, cassimeres and ladies' dress goods. Strong on unions. 50 years of age, married. Could take a position at once. N. E. States only. 4654, Textile World Record, Boston, Mass.

Overseer of Dyeing. Worked on wool, cotton and shoddy, mixes, raw stock, piece dyes, yarns, carbonizing and scouring. Good reference. 35 years of age, married. 4658, Textile World Record, Boston, Mass.

Boss Dyer in a Woolen Mill. Position wanted by a man 27 years of age, single, English. Worked on piece dyes, woolen and worsted, army and navy indigo blues (synthetic and natural), raw stock. Familiar with Woad vat, Hydrosulphite-Ammonia vat, Bisulphite vat. Good references. 3983 Textile World Record.

Overseer of Dyeing. Position wanted by a man 44 years of age and Scotch. Has worked on wool and worsted yarns, slubbing, piece dyeing, cotton raw stock, long and short chain yarn, chain printing, felt, hosiery and knit goods. Is familiar with all kinds of dyeing machinery. Good references. 3520, Textile World Record, Boston, Mass.

Overseer of Dyeing. 34 years of age, single. Has worked on serges, wool and worsted, thibets, cheviots, kerseys, cotton and wool raw stock, and cotton and worsted yarns. Is familiar with all makes of dyeing machinery. Good reference. Will not go West, South or Canada. 4519, Textile World Record, Boston, Mass.

DYERS.

Overseer of Dyeing. Worked on worsted yarns, piece dyes, raw stock and slubbing. Will not go West or South. Good reference. 41 years of age, married. 4630, Textile World Record, Boston, Mass.

Overseer of Dyeing or assistant superintendent of a woolen mill. Worked on dress goods, union cassimeres, thibets, overcoats, suitings, piece dyes, raw stock, cross dyes, fancy shoddies, a specialty. Prefers a position in the N. E. States. Good reference. 27 years of age, married. 4657, Textile World Record, Boston, Mass.

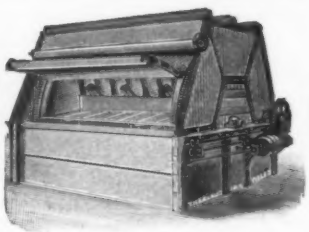
Overseer of Dyeing. Worked on piece dyes, wool, worsted and cotton yarns, wool, cotton raw stock. 35 years of age, married. Good reference. 4661, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 47 years of age. Worked on all kinds of woolen goods, raw stock, piece dyes, skein yarns, union, cross dyes and knit goods. Familiar with the different makes of machinery. Good references. Will not go to Canada. 3942, Textile World Record.

Overseer of Dyeing. Married man, 42 years of age. Has worked on all classes of woolen goods, raw stock, piece dyes, unions, cotton yarns, underwear and is an expert on hosiery dyeing. First-class reference. 4091, Textile World Record, Boston, Mass.

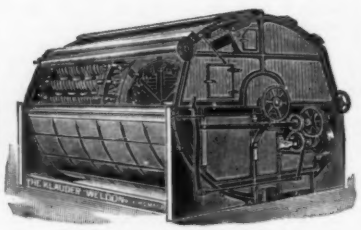
Overseer of Dyeing, Bleaching, Mercerizing or Dyestuff Salesman. Position wanted by a man 45 years of age, married, English. Has worked on all kinds of woolen and cotton yarns and is familiar with all kinds of dyeing, bleaching and mercerizing machinery. First-class references. 3686, Textile World Record, Boston, Mass.

Boss Dyer and Mercerizer in cotton, woolen, silk or hosiery mill. Position wanted by a man 40 years of age, married, American. Worked on wools, unions, silks, hosiery and cops. Familiar with various makes of machinery. Three workers in the family. Will not go West. Good references. 4004 Textile World Record.



RAW WOOL AND COTTON MACHINE.

MACHINES
sold on
2 MONTHS' TRIAL
YOU
TAKE
NO
RISK

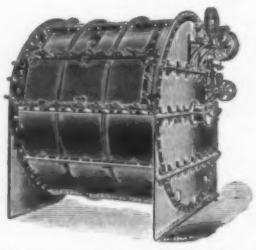


SKEIN AND SLUBBING MACHINE.

THE KLAUDER-WELDON DYEING MACHINE COMPANY

P. O. Box K, AMSTERDAM, N. Y.

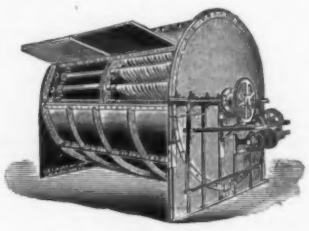
Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



SULPHUR HOSIERY MACHINE.

Special Machines for Sulphur Colors

WILL EARN THEIR COST IN
LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



SULPHUR SKEIN MACHINE.

DYERS.

Overseer of Dyeing in a cotton mill. Position wanted by a man 37 years of age, married, English. Worked on all standard color for ginghams, knit piece goods for underwear, skein yarns for the thread and shoe lace trade, also bleaching. Will not go West or South. Familiar with Scotch warp machines, Klauder Weldon dyeing machines, reel machine for dyeing knit piece goods. Good references. 4001 Textile World Record.

Overseer of Dyeing. 48 years of age, American, married. Worked on raw stock, slubbing, yarns, piece dyes, indigo and hydrosulphate vats. Good reference. Could take a position at once. 4523, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 37 years of age, married and American. Has worked on piece dyes, cross dyer on cotton and worsted, skein and stock. Is familiar with all kinds of dyeing machinery. Good references. 3572, Textile World Record, Boston, Mass.

Overseer of Dyeing and bleaching. Position wanted by a man, 28 years of age, single, American. Has worked on cotton warp, short and long chain, raw stock, piece goods. Has had a wide experience on awnings tickings, cotton worsted suitings, flannels, ginghams and indigo dyeing. Familiar with the Klauder & Weldon and Delehanty machines and jig dyeing machines. Good reference. 3789, Textile World Record, Boston, Mass.

Overseer of Dyeing in a woolen mill. Position wanted by a man, 37 years of age, single, American. Has worked on piece dyes, raw stock, cotton, wool and shoddy, yarns, etc. Good reference. 3812, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 43 years of age; married; Scotch. Worked on cotton, wool and worsted dress goods, knitting yarns. Good reference from mills in Scotland where he has been employed as manager of dye and finishing works. 3456, Textile World Record.

Promotion for Textile Workers

The most practical, surest, and quickest way in the world for ambitious textile workers to secure promotion is offered by an institution through whose assistance thousands of men have already advanced to better positions and larger salaries. They have done this in their own homes, in their spare time, and at an insignificant cost. We will cheerfully explain, free of charge, how we can adapt our plan to **YOUR** personal needs and income if you will write us today, stating the position you would like to secure.

INTERNATIONAL CORRESPONDENCE SCHOOLS, Box 882, Scranton, Pa.

MISCELLANEOUS.

Fixer in a Hosiery Mill. Worked on Mayo, Acme, Wildman ribbers and loopers and ladies', gents' and infants' cotton, merino and worsted hosiery. 22 years of age, single. Good reference. 4653, Textile World Record, Boston, Mass.

Second Hand in the dye house or finished percher. Worked on beavers, kerseys, broadcloths, thibets, flannels, cotton mixes, cheviots and cassimeres. Would prefer a position in the N. E. States. 25 years of age. Good reference. 4648, Textile World Record, Boston, Mass.

Second Hand in woolen or worsted finishing room, overseer of burling, and sewing or finished percher. Worked on fancy and plain worsteds, woolens, cotton worsteds, broadcloths, kerseys, beavers, meltons and dress goods. Understands most all makes of finishing machinery. 33 years of age, married. Good reference. 4665, Textile World Record, Boston, Mass.

Overseer of Spooling, twisting and winding in a thread or linen mill. Familiar with all makes of winding and spooling machines. Good reference. 30 years of age, single. 4667, Textile World Record, Boston, Mass.

Clerk or Confidential Clerk to superintendent of a woolen or worsted mill. Has been employed in leading mills in Massachusetts. Good reference. 39 years of age, married. 4651, Textile World Record, Boston, Mass.

Second Hand in Dye House. Worked on all classes of wool and worsteds. Is a graduate of chemistry. Would like to get a position where the overseer would give him a chance to show what he is worth. Good reference. 27 years of age. 4649, Textile World Record, Boston, Mass.

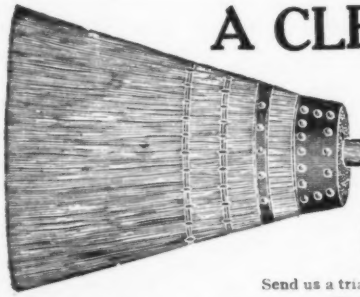
Master Mechanic, engineer or machinist. Married man 36 years of age. Has worked on cotton and woolen machinery and familiar with various makes of machinery. Has had a wide experience as machinist and engineer with good reference. 4565, Textile World Record, Boston, Mass.

Position Wanted
by a Man with 18 Years Experience

in all lines of mechanical work connected with the designing, erection, equipment and management of Dye Houses, Bleacheries, Cotton Mills, etc. Address "Mechanical," care Textile World Record, Boston, Mass.

Superintendent of a Bleachery

or overseer of dyeing. Position wanted by a man 44 years of age, American. Worked on cotton piece dyes, plain and prints, spool cotton, yarns, warps, raw stock and hosiery. Familiar with all kinds of machinery used in an up-to-date bleachery and dye works. Good reference. Address "P. T. T," care Textile World Record, Boston, Mass.



A CLEAN SWEEP and lots of them by using the

DIXIE TEXTILE MILL BROOM

It has no superior. Its only equal another Dixie.

A three string 20 lb. broom, equal to a 24 lb. wound broom $2.00 per doz.
A three string 22 lb. broom, equal to a 26 lb. wound broom $2.25 per doz.
A three string 24 lb. broom, equal to a 28 lb. wound broom $2.50 per doz.
Lower prices on larger quantities. Prompt shipments.
Send us a trial order. You are under no obligations if they are not entirely satisfactory.

The DIXIE is made only by the Dixie Broom Co., Box 321, Richmond, Va.

It All Depends on Results

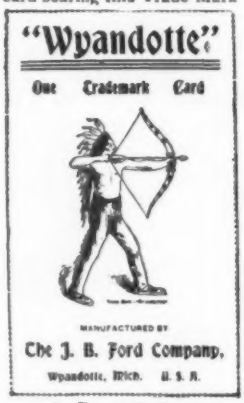
One horse may cost $50 and another $250, but you would not necessarily conclude that the horse for which you paid $50 was five times the better bargain. It all depends upon the results you are able to obtain with them.

So with chemicals, their value to you depends upon the results they enable you to obtain.

WYANDOTTE TEXTILE SODA

makes it possible for you to get from both the raw wool and the finished product their full value.

None Genuine except with card bearing this Trade Mark



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So desirable are the results produced by Wyandotte Textile Soda that it often seems as though new and original properties have been added by its action.

If you make use of these facts they will be worth a great deal of money to you.

If you are interested, write us.

The J. B. Ford Co., Wyandotte, Mich.

Sole Manufacturers

THIS SODA HAS BEEN AWARDED THE HIGHEST PRIZE WHEREVER EXHIBITED

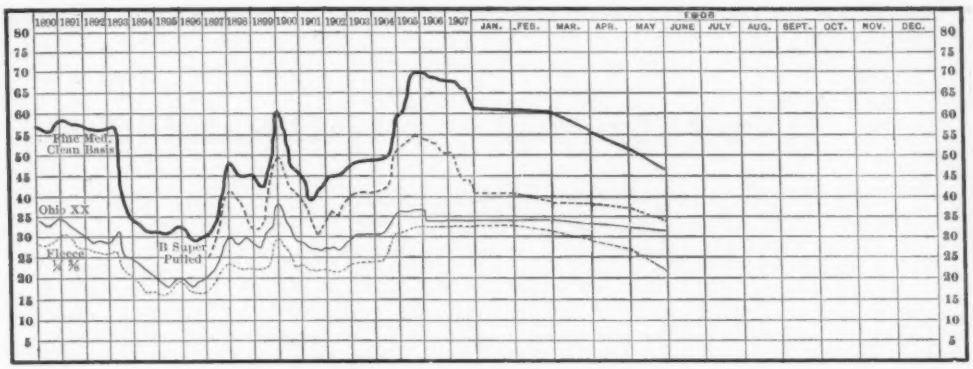


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

The Wool Market.

A severe depression in the goods market at a time of the year when the arrival of a new clip always tends to depress prices is responsible for the low prices at which wool is now offered. Undoubtedly the fear of a revision of the tariff is largely responsible for the unwillingness to buy wool at the present time. Fine medium territory at 45 cents seems low compared with the prices prevailing a year ago, but it seems high to the manufacturer who cannot sell goods even on a 45-cent basis.

The decline in wool prices has caused heavy losses to all branches of the trade, but the growers have been hit the hardest because Eastern buyers have bought but sparingly of the new clip. Wool dealers have taken their losses on most of the wool they were caught with and are now letting the growers carry the load while they wait for prices to touch bottom.

There is nothing to warrant a belief in a revival of trade until after the political situation has been cleared up. After that, however, the readjustment of values which is now being effected will afford a basis for a revival of business.

*Massachusetts, Chelsea. The Suffolk Knitting Co.'s plant was not damaged by the recent fire and the report that they are interested in a proposition to establish a factory at Milford, N. H., is incorrect. A member of the Suffolk Knitting Co. was in Philadelphia recently and purchased a number of machines and some supplies from the late Quaker City Knitting Co. for installation in the plant at 25 Poplar St., Chelsea.

*Tennessee, Chattanooga. The Davis Hosiery Mills advises that the increase in capital stock from $200,000 to $250,000 was merely to obtain money needed in the business and no enlargement will be made.

Massachusetts, Northampton. Claiming that its operatives are paid 25 to 30 per cent. higher wages than are paid by any similar concern in the country, the McCallum Hosiery Co. Inc., has decided to reduce wages. The operatives are dissatisfied with the decision and owing to this, the management has decided to close the mill temporarily. About 350 hands are employed. Men's, women's and misses' fine silk hosiery of high grade is manufactured on 60 flat knitting and 40 sewing machines.

Pennsylvania, Philadelphia. The Thomas D. Weston Co., which commenced operations here about three years ago with a capital of $25,000, with Wm. M. Field, president; W. L. Waring, vice-president, and Thomas D. Weston, secretary-treasurer and manager, have shut down their plant at 3723 Filbert St., and report that at present they cannot state what disposition will be made of it. They have not decided whether the company will be reorganized or whether it will be sold out to other parties, both propositions being under consideration. The plant contains 10 knitting, 6 sewing machines and 4 loopers, which were run on high grade worsted golf gloves.

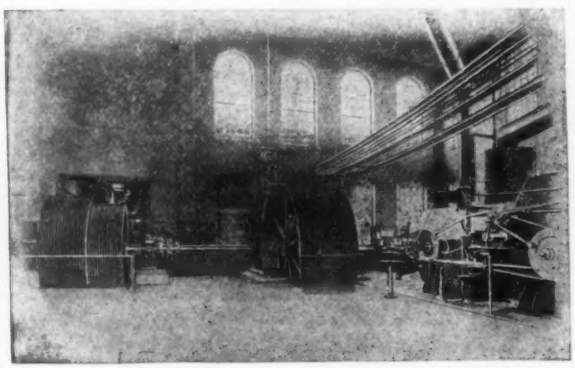
*South Carolina, Walhalla. It is officially announced that the increase in the capital stock of the Oconee Knitting Mills from $30,000 to $50,000 will not be used to increase the number of knitting machines in the plant. It will be used to increase the working capital and the machinery in the dyeing and finishing departments. 79 knitting machines, 2 sewing machines and 37 ribbers are operated on men's, women's and children's hosiery. R. T. Jaynes is president, James M. Moss is treasurer, and J. F. Roberts is superintendent and buyer. Product is sold through Sutton & Co., New York.

*Virginia, Richmond. The Virginia Rug & Drugget Co. is considering plans for installing machinery for the manufacture of ladies' underwear in their present plant and possibly for increasing the capacity of the plant to provide space for this new department of their business. They are interested in receiving information on equipment and supplies necessary for the manufacture of this line. Robert M. Smith is president and buyer.

A Never-Slip Transmission

that has wide adaptability in textile manufacturing. Plymouth Rope Drives cost less to install, less to maintain than leather belting and the absence of slip gives great steadiness to the power transmitted. They run quietly and are free from electrical disturbances.

Plymouth

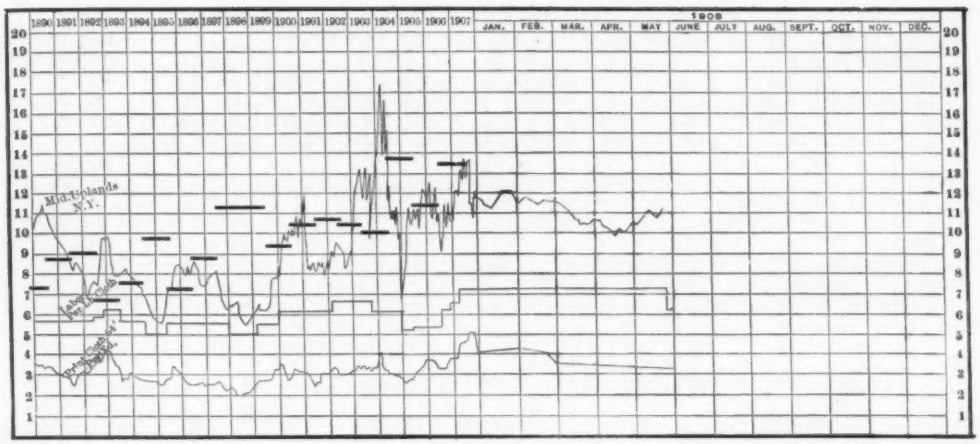


Rope Drives

They occupy but little space, give high efficiency on long or short drives, can be run in any direction and can be used in many places where it would be impossible to use belting. "Plymouth" Rope Drives are giving satisfaction in many representative mills.

Send for booklet on "Rope Driving."

Plymouth Cordage Co., No. Plymouth, Mass.



The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.
CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE.

The Cotton Market.

The drop in prices last month was due mainly to the operations of speculators. Advantage was taken of the depression in the goods trade to hammer prices, but the subsequent revival indicates the strength of the general situation. One noteworthy feature has been the resistance offered to the decline in the South. A controlling factor in the cotton market is the fact that the movement into sight is over two million bales behind last year's figures. This offsets a very large reduction in the consumption by the mills. The movement into sight from September for a series of years is estimated by the Chronicle as follows:

Year.	Bales.
1907-08, May 29	10,627,352
1906-07, May 30	12,807,325
1905-06, June 1	10,285,306
1904-05, June 2	12,130,179
1903-04, June 3	9,652,266
1902-03, June 4	10,279,530

The same authority estimates the world's visible supply on May 30 at 3,263,986 bales, as compared with 4,174,838 at corresponding date in 1907, 3,734,862 bales in 1906, and 3,875,917 bales in 1905.

*North Carolina, Wilson. Little progress has been made toward the completion of plans for the proposed cotton wadding plant. The Wilson Grocery Co. was reported to be promoting the proposed new industry.

Ohio, Cincinnati. It is again reported that the Joseph & Bros. Company will start a bleachery for cotton goods. It is stated that plans have been completed for a building of brick, 100 by 200 ft., and 2 stories high. A separate power plant will be erected. The total expenditure is estimated at about $100,000.

*Oklahoma, Shawnee. Information regarding the bonus of $25,000 offered for the location of a cotton mill at this place may be obtained of D. A. Crafter, sec. of the Shawnee Real Estate Exchange.

*Oklahoma, Mangum. The corporation which we reported as being formed and securing charter under the name of the Farmers' Cotton Mill Co., will not manufacture cotton goods. This is a cotton oil company and the title is the Farmers' Cotton Oil Co.

*South Carolina, St. Matthews. A corporation is being organized by local parties for the purpose of developing water power and erecting a cotton mill to operate about 20,000 spindles. This project was referred to some time ago.

WEIMAR BROS. MANUFACTURERS OF Cotton Mercerized Tapes,
SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES.
Phone Connections. Works, 2046-48 Amber Street, PHILADELPHIA, PA.

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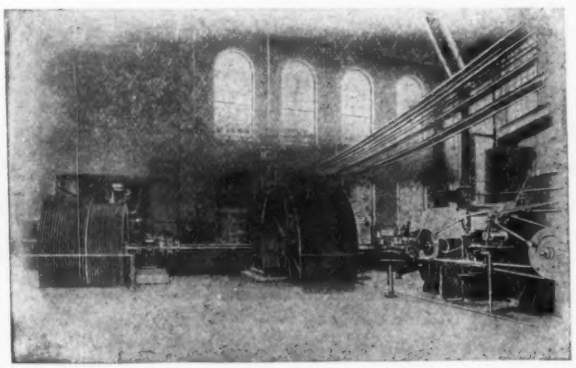
that has wide adaptability in textile manufacturing. Plymouth Rope Drives cost less to install, less to maintain than leather belting and the absence of slip gives great steadiness to the power transmitted. They run quietly and are free from electrical disturbances.

Plymouth



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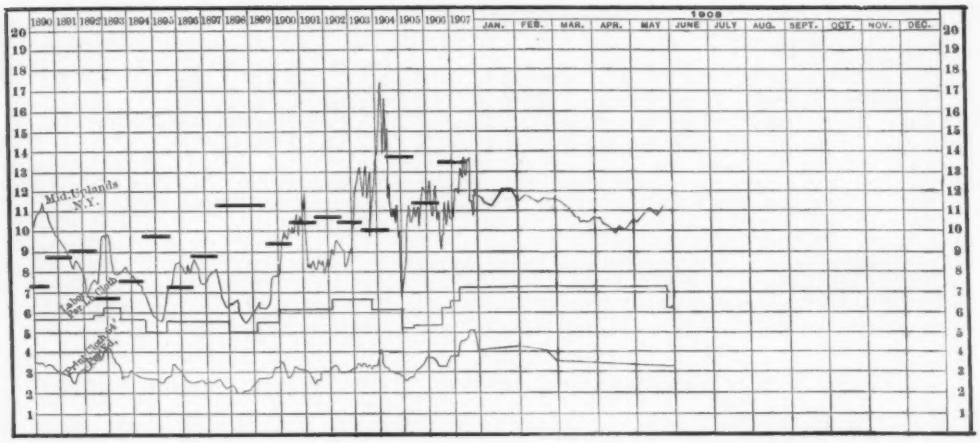

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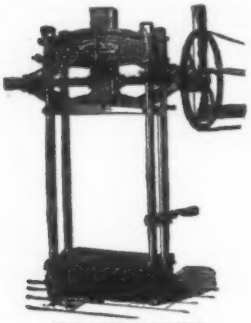

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Hydraulic or Knuckle Joint
Any Size .. Any Power

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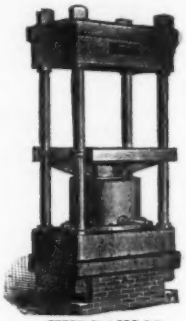
Southern Agent, A. H. WASHBURN, Charlotte, N. C.



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EXCELSIOR WOOL OIL COMPOUND AND COTTON SOFTENER

Established 1841

Burckhardt & Co.

Cincinnati, O.

The Excelsior Compounds are the best lubricating and softening products for wool, cotton, wool and cotton mixed. Eliminates the scouring process and effects large saving in time and soap. They will not gum in the cards

Write for prices and particulars.

OLIVE OIL TALLOW SOAP

LARD OIL

UTICA WILLOWVALE BLEACHING CO.

Sheetings, Shirtings, Lawns, India Linons.
Everything in White Goods.

John MacManus, Superintendent.

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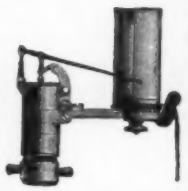
A Crosby Indicator

In the Hands of a Competent Man Will Increase the Efficiency of Your Plant and Cut Down Your Coal Bill. Faultless in Design. Perfect in Workmanship.



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Pop Safety Valves
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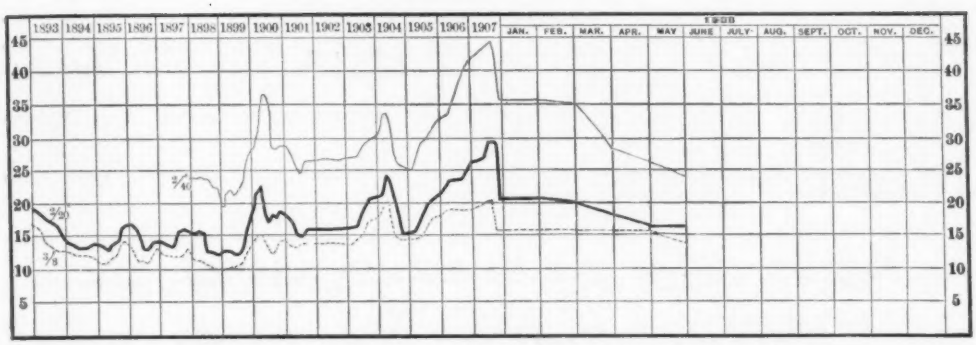


GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

The Cotton Yarn Market.

There has been considerable activity in the yarn market during the past few weeks, and a number of orders have been placed by parties who consider that the market has reached bottom and that present prices represent a safe basis on which to own yarn. We believe buying has been more in anticipation of orders than to cover orders.

Trade with weavers and knitters for prompt delivery is still dull. There is, however, a more hopeful feeling among the manufacturers, which in itself is a decided gain and probably forecasts better business.

The cotton market has advanced sharply and is holding strong showing that cotton is in the hands of parties who are able to hold it, if they cannot get satisfactory price.

Quotations today are about as follows:

Eastern Cops.

6s	18
8s	18½
10s	19
14s	20
16s	20½
18s	21
20s	21½
22s	22
24s	22½
26s	23
30s	24
34s	25
36s	26
40s	27

On cones, ¾c. more up to 14s; 1c. more from 15s to 22s; 1½c. from 23s to 35s, and 2c. above that.

Eastern Two-Ply Skeins, Carded Peeler.

12s	20½
14s	21
18s	22
20s	23
24s	24
26s	24½
30s	25
36s	28
40s	29
45s	37
50s	40
55s	45
60s	49

Eastern Two-Ply Warps, Carded Peeler.

2/30s	25
2/36s	28
2/40s	29
2/45s	38
2/50s	41
2/60s	50

Egyptian Weaving Yarns.
Single Skeins Combed.

30s	36
36s	37½
40s	38½
45s	40
50s	46
55s	49
60s	53
70s	58

Rhode Island, Pawtucket. At the Burgess Mills and the American Yarn Mfg. Co., both of which have been on short time for some weeks, the full time schedule of working hours was resumed on Monday morning.

South Carolina, Ware Shoals. At a special meeting of the stockholders of the Ware Shoals Manufacturing Co., it was voted that the capital stock be increased from $1,000,000 to $1,300,000. Originally it was proposed to increase the stock $500,000, but a compromise was made on the above increase.

THE J. R. MONTGOMERY CO.,

Windsor Locks, Conn.

MANUFACTURERS OF

Mercerized Cotton Yarns Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

Novelty Yarns Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps on Beams, Jack Spools and Tubes. In Fancy, Twist, Colors and Printed.

GREENE & DANIELS MFG. CO.,

COMBED, CARDED AND GASSED

Yarns, Threads, Twines and Chain Warps.

DYE SULPHUR BLACKS DIRECT IN COPS, CONES OR TUBES.

Colored and Bleached Yarns Furnished in any manner desired by the trade.

Pawtucket, R. I.

MONUMENT MILLS,

Manufacturers of

White, Colored, Fancy and Double Twist

COTTON WARPS

HOUSATONIC, MASS. 4s to 60s.

M. J. TOOHEY & CO., OF FALL RIVER, MASS.

Banding made from Egyptian or White Cotton Yarn as Desired.

The Other Fellows Banding.

The Merwin Paper Company

Hartford, Conn.

Press Papers and Fender Boards

Correspondence Solicited

Mills at Rainbow, Conn. Address Inquiries to Rainbow, Conn.

The Philadelphia Market.

Southern frame spun cones:—

7s and coarser	16½
8s and 9s	16¾
10s	17-17½
12s	17½-18
14s	18-18½
16s	18¼-19
18s	19
20s	19¼
22s	20
24s	20½
26s	21
30s	22
40s	27
50s	37

Southern high grade mule yarn:—

Cones.

10s	19½
12s	20
14s	20½-21
16s	21½
18s	22
20s and 22s	22½-23
24s	23

Southern frame yarn, lower grades:—

6s and 8s	16
10s	16½

Eastern cones (high grade quality):—

10s	20½
12s	21
14s	21½
16s	22¼
18s	22¾
20s and 22s	23¼-23¾

Skein yarn (mostly Southern):—

4s and 8s soft	15½-16
10s and 12s	16-16¼
14s to 20s	16-17
22s	17½-18
14/2	16-16½
16/2	17
20/2	17½
30/2	19½-20
40/2	27
16/3 slack	17½
12/3 slack	17
8/3 carpet	15½
8/3 slack	15½
9/4 slack	15½

Warps (Southern):—

10s to 12s	16
14s	16
16s	16½
20s to 22s	17-17½
26s	19
14/2	16½-17
16/2	17-17½
20/2	17½-18
24/2	18-18½
30/2	19-20
40/2	28

JAMES E. MITCHELL CO., COMMISSION MERCHANTS.
Cotton Yarns
AND COTTON CLOTHS.
122-124 Chestnut Street, PHILADELPHIA, PA.
73 Leonard Street, NEW YORK.
Brown Building, 185 Summer Street, BOSTON, MASS.
25 South Tryon Street, CHARLOTTE, N. C.

CATLIN & CO.,
Cotton Yarns.
345 Broadway, NEW YORK.
67 Chauncy Street, BOSTON.
128-130 Chestnut Street, PHILADELPHIA.
605 Medinah Temple, CHICAGO.

Harding, Whitman & Co.,
Dry Goods Commission Merchants,
COTTON AND WORSTED YARNS.
BOSTON. NEW YORK. PHILA.
CHICAGO. BALTIMORE. ST. LOUIS.

A. D. Salkeld & Bro.
COMMISSION MERCHANTS
DEP'T. FRED'K VIETOR & ACHELIS
COTTON YARNS
66-72 LEONARD STREET - - NEW YORK

Fred Sternberg & Co.
530 Broadway, - NEW YORK.
MERCERIZED TURKEY RED GASSED } COTTON YARNS.

LUDWIC LITTAUER,
SUCCESSOR TO
MOELLER & LITTAUER, 109 Greene St., New York
SILK, WORSTED, WOOLEN YARNS COTTON AND MOHAIR
Polished Threads and Tinsel. Artificial or Wood Silk.
Mercerized, Turkey Red, Fine Gassed Yarns.
SILK MILL, BOONVILLE, N. Y.

High Grade Hosiery Yarn
White and Colors. All Numbers. Sewing Twines on Cones and Tubes
SPECIALTIES IN WEAVING YARN
Black and White. Double and Twist for Woolen Trade.
CANNON MILLS 53-5 Worth Street, New York
Philadelphia Office, 205-7 Chestnut St.

C. MOORE & CO.,
Manufacturers of
TWINES, THREADS AND YARNS
Jacquard Harness Twines of all kinds
on hand and made to order.
S. W. Cor. Fifth and Market Sts., Phila.

C. T. Crocker, Pres. W. F. Stiles, Treas.

ORSWELL MILLS

Fitchburg, Mass.

Capacity, 45,000 Spindles.

HIGH GRADE YARNS

From Egyptian and Peeler Cottons, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted.

Cotton Yarns

Jenckes Spinning Company
Pawtucket, R. I.

Carded and Combed single and twisted Yarns and Threads from Peeler, Sea Island and Egyptian Cottons, on Cops, Cones and Tubes or in Skeins and Warps. Six Cord Thread Yarns a Specialty **Bleached or in colors**

GRANT YARN CO.,

COMBED AND CARDED COTTON.

YARNS 40's and above. AND **WARPS**

FITCHBURG, MASS.

F. W. MAURER & SONS CO.

MANUFACTURERS OF

TAPES, BINDINGS, NARROW FABRICS AND EDGINGS FOR NOVELTY CURTAINS

Office, 528 Cherry St. Factories, 529 & 531 Arch St. and 524 Cherry St., and Germantown Ave. & Bristol St.
PHILADELPHIA

Hoffman, DeWitt & McDonough Co., Inc.

Manufacturers of

Diamond Stay Bindings TRADE MARK

Tapes, Webbing and Bindings.

COTTMAN and G STS., PHILADELPHIA
CHELTENHAM, PENNA.
Bell Telephone, 235-D Cheltenham

Simplex Yarn Tables.

Showing equivalent sizes of different systems of numbering yarn; cotton, woolen, worsted, etc., so that the sizes of different standards may be quickly compared. Also contains a number of other valuable yarn tables for designers, manufacturers and knitters. PRICE 50c. Textile World Record, Boston.

Established 1880 Capital $20,000.00

New York Silk Conditioning Works
138-140-142 Spring Street
New York, N. Y.

Do you know how much water you are buying in your wool, cotton and silk? Write us.

Ballou Yarn Co.
PROVIDENCE, R. I.

Harness and Seine Twines and other Job Gassing, Winding, etc. All Numbers

GASSED YARN SPECIALTIES

C. M. BLAISDELL, Pres. and Treas. G. A. BLAISDELL, Vice-Pres. and Sec'y.
Established 1860—Incorporated 1893.

THE S. BLAISDELL, JR., CO.,

COTTON, EGYPTIAN PERUVIAN

American Long Staple a Specialty. Shipments direct to mill from Egypt, Peru and all American Southern Points.

CHICOPEE, MASS.

Cotton Waste Purchased on Yearly Contract from Mills.

Reels for Cotton WOOLEN AND WORSTED

Patented Hosiery Winders, Cop Winders and Spoolers.

LINDSAY, HYDE & CO.,
2124 to 2130 East York St., PHILADELPHIA, PA.

Lowell Crayons Meet the requirements of any cotton, woolen or worsted mill.

May we send samples? 15 colors and white.

Lowell Crayon Co., Original Manufacturers **Lowell, Mass.**

Trade Mark on every box.

Mixed colored yarns (mock twist, half colors):—

6s to 10s	18-19
12s to 14s	19-20
16s to 18s	22-23

Mock Egyptian, 2c. advance over white.

Egyptian, 5 to 6c. above best quality white.

*Pennsylvania, Apollo. The incorporation of the Apollo Woolen Mills, Inc., will not affect the interests operating the plant. L. W. Huyck has been elected president, Thomas A. Cunningham, treasurer, and W. W. Flinn, superintendent. Blankets are manufactured on one set of cards and 13 looms.

*Pennsylvania, Chambersburg. The receivers are still in charge of the Chambersburg Woolen Co. which went into bankruptcy on Jan. 7. Mr. D. K. Appenzellar, pres. of the company is making a proposition to creditors which. if successful, will restore the plant to the owners and to operation about July 1.

Pennsylvania, Clifton Heights. The Runnymede Worsted Mills are running until 10 o'clock at night on worsted and merino yarns (French system), operating 31,418 spindles, 11 cards and 14 combs. John C. Baldwin is the superintendent and Ernest R. Townson, Philadelphia, selling agent.

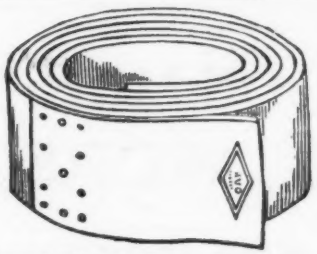
*Pennsylvania, Philadelphia. The Star & Crescent Department of Stead & Miller Co., formerly the Star & Crescent Mills Co., are now in full operation at Hancock St. and Lehigh Ave. They are operating 100 narrow and 60 broad looms on Turkish towels and robes and madras curtains which they sell direct through their salesrooms in New York City and Chicago. Frank Leake is the manager and Douglas Leake the buyer for this department.

Pennsylvania, Wallingford. The Elston Worsted Company, of which Arthur Elston is the proprietor, is very busy on fancy worsted dress goods, operating 40 looms and selling the production direct.

Pennsylvania, Wallingford. The Columbia Worsted Mills are quite busy operating 4 combs and 2,500 worsted spindles on worsted yarns which they sell through Ernest R. Townson, Philadelphia. Richard Snowden is now the superintendent, having succeeded Samuel Feather, who has retired.

Pennsylvania, York. Several hundred silk weavers employed at the Diamond Silk Mills and the York Silk Mfg. Co. have left their work because of the announcement of the decrease of 12 1/2 per cent. in their wages. M. G. Collins, receiver for the York Silk Mfg. Co., who is operating the plants, is trying to reach a satisfactory agreement with the employes.

Pennsylvania, Philadelphia. R. Weston's glove manufacturing plant at 1631 Hunting Park Ave., containing 14 knitters, operated on woolen and worsted gloves, which was burned out several months ago, will not be started up again.



ESTABLISHED IN 1701.

This is historic fact. Seven generations of the Rhoads name in America have been engaged in the leather business handed down from father to son. Every generation has numbered its tanner. Five generations operated the same tannery. Whether you honor the good old times or smile at the rule of thumb, such an inheritance is a solid foundation for a 20th century leather business. That explains the quality of

RHOADS LEATHER BELTING.

With the best of the old we are alert to combine the best of the new.

J. E. RHOADS & SONS,

PHILADELPHIA: 12 N. 3rd St. NEW YORK: 40 Fulton St.
BOSTON: 105-111 Summer St.
Hamblet & Hayes Co., Eastern Agents.
Factory, Wilmington, Del.

LINEN YARN IMPORTER.

HUGHES FAWCETT, 115 Franklin Street, NEW YORK.

Flax, Hemp and Jute Line and Tow Yarns,
For Weaving Purposes.
Linen Jacquard Harness Twines,
Fine Cotton Harness and Heddle Twines,
For Cotton, Silk, Woolen and Carpet Manufacturers.
Correspondence solicited. Samples promptly furnished.

DUNCAN & YOUNGS
95 Worth Street, NEW YORK
Practical Manufacturers of
YARNS, THREADS, TWINES, CORDS, ROPE
AND MILL SUPPLIES
Anything in the line you cannot get anywhere else apply to us.

FRANK A. TIERNEY,
TOPS, NOILS, ROVINGS, YARNS.
Wool, Silk, Mohair, Camels Hair, Ramie.
Garnetted Stocks
Silk also Ramie Tops and Noils, Ramie, Silk, and Silk Noil Yarns,
Special Textile Fibres and Novelties.
Wool Exchange Bldg., 260 West Broadway, New York.

MILL CRAYONS OUR SPECIALTY
Made in 15 Colors and White. 2 Grades.
Write for Quotations.
Howe Mill Crayon Co., Lowell, Mass.

Pocasset Worsted Company

WORSTED YARNS

100 Boylston Street, - Boston, Mass.

French System. **B. F. BOYER CO.,** Bradford System.

MANUFACTURERS OF

WORSTED AND WOOLEN YARNS,

Office and Mill, River Ave. and Marlton St. CAMDEN, N. J.

KROUT & FITE MANUFACTURING CO.,

Manufacturers of

Silk, Cotton and Mercerized Narrow Fabrics

SPOOL TAPES A SPECIALTY.

Telephone Connection. Office and Mill, Allegheny Ave. and Emerald St., PHILADELPHIA.

WORSTED YARNS

RICHARD CAMPION.

SELLING AGENT FOR

Bristol Worsted Mills,
Highland Worsted Mills.
The French Worsted Co.

300 Chestnut Street,
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EDDY & STREET,

Cotton, Woolen

Yarns and Braids

Worsted, Spun Silk.

PROVIDENCE, R. I.

Beacon Narrow Fabric Co.

Braids & Tapes

Notre Dame St. FALL RIVER, MASS.

Woolen and Merino YARNS

Eaton Rapids Woolen Mills,

EATON RAPIDS, MICH.

Bradford System French System

STEPHENSON & CO.

Worsted and Woolen Yarns

240 Chestnut Street
PHILADELPHIA.

Worsted AND Woolen Yarns

WALTER McCOOK

BELL TELEPHONE LOMBARD 3790 576 Bourse Philadelphia

Joseph D. Swoyer & Co.,

Manufacturers and Commission Merchants

Woolen, Worsted and Cotton Yarns

HOWARD AND BERKS STREETS,
PHILADELPHIA.

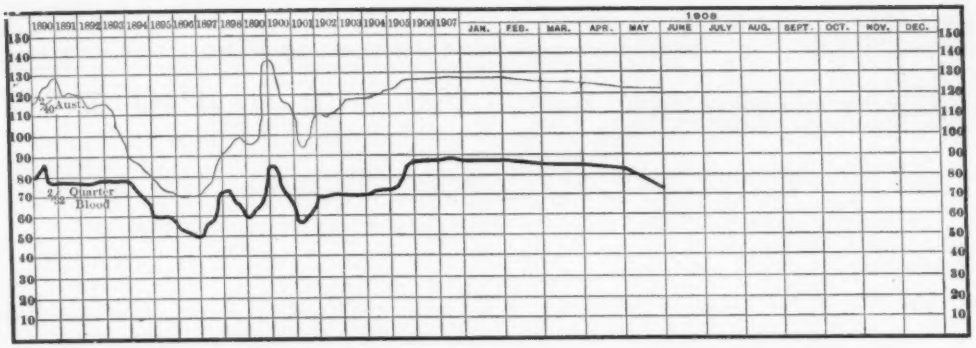

CHART SHOWING RANGES OF PRICE OF WORSTED YARNS.

Worsted Yarn Market.

Spinners report that they are just covering orders for warp and filling as they come in from manufacturers who are placing orders on a hand to mouth basis. There is, however, a belief, which is almost universal among the spinners, that the price of wool has reached its lowest figure and that the wool market is now on a firmer basis and that there will be no necessity for making further reduction on any orders for yarn that may be offered. There are signs, it is said, in certain quarters that a slight improvement has taken place in the manufacture of both men's and women's wear, the former making a few inquiries for 2/50s, the demand being mostly for 2/40s, 2/36s and 2/32s, some mills using 2/24s and 2/20s, but these are exceptions to the rule. The dress goods mills are running on 2/70s singles from 40s down to 24s. It is also reported that some of the dress goods manufacturers who have been using singles have determined to use two-ply yarns, claiming that it makes a more solid cloth.

Business from the West is good, particularly from the underwear, fancy knit goods and sweater trade, all of whom report a good business. The underwear trade in the East is placing very few orders for yarns and the claim is made that if they do not soon enter the market the business from this end will be small. What orders are coming in from this section are being placed by the manufacturers of sweater coats, etc., all of whom claim to be busy.

The dress goods trade is about in the same condition as reported last month, some manufacturers reporting trade as dull, others are shut down, and in a few instances some concerns are working full time or overtime, the volume of business being received for novelties which have taken well in the market and for which duplicate orders are being received.

The duplicate business on men's wear for the past few weeks has been an improvement over the previous ones, most of it being spot and only the more desirable lines are getting a material share of it. Everybody seems to hold fast to browns for the coming fall and other shades are in only moderate demand. There is undoubtedly a large amount of business being held back in consequence of the doubt on the part of the manufacturer as to the financial condition of his customers. Again some clothiers are looking for lower prices; at any rate they do not seem disposed to take any chances whatever and pieces must be sold before they will buy. Everybody wants goods immediately which, of course, is impossible. When buyers are told that from four to six weeks must elapse before the earliest deliveries can be made they complain bitterly. It looks as though the clothier is trying to shift the responsibility of carrying stock and delivering merchandise promptly on the merchandise, not being able to get the retailer to place his orders as early as usual. The clothier not having anyone else to fall back on is proving to be a very poor loser.

Rain cloths are selling in high colors and fancy decorations almost exclusively and oxfords are doing very poorly. This line of cloths have to some extent been succeeded by a line of rubberized goods which has been very successful, but as this seems to be only a novelty the rain cloths will soon be as popular as ever.

There have been no lines for the spring of 1909 opened as yet. Everyone is at sea regarding shades and fabrics. The price question is also another problem to solve. Just now it does not look

TRADE MARK REGISTERED IN
NON-FLUID OILS
UNITED STATES PATENT OFFICE

Sharpen your pencil and figure this out

Economical lubrication is the reduction of friction costs — not the reduction of the oil bill.

Grease is not an economical lubricant because it cannot even begin to lubricate until softened up by frictional heat in the bearing. The total cost of a year's supply of lubricants is a mere trifle compared to the cost of fuel and power wasted in overcoming even a little friction.

Non-Fluid Oils are free from this friction-producing fault of greases. They lubricate with least friction, but do not drip, spatter and waste like fluid oils. Test these economical lubricants at our expense. Samples and interesting booklets free.

ORIGINATORS AND SOLE MANUFACTURERS

New York & New Jersey Lubricant Co., Dept. H, 14-16 Church St., New York City

William B. Charles,
Amsterdam, N. Y.
Cotton Yarns, Cotton Cloth, Silesia, Sateens,
For the Underwear Trade.

EDWIN F. SCHOFIELD
ALL GRADES
PULLED AND FLEECE WOOLS
FOREIGN NOILS, CARPET WOOLS.
COTTON WASTE.
45 SOUTH 3RD STREET,
Philadelphia, Pa.

JOSEPH M. ADAMS CO.
WOOLEN YARNS,
Carpet Backing and Rug Yarns a Specialty.
ARCOLA MILLS,
Main St., foot of Centre St., Manayunk, Philadelphia

Knitting and Weaving YARNS.
Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment.
EDWARD S. HYDE,
226 CHESTNUT STREET,
Philadelphia, Pa.

as if lines of any importance would be opened until after the 4th of July, with the exception of fancy serges. Some concerns are talking about opening June 15. Here and there some selling agents, however, are running around trying to get special business, but the results are evidently very unsatisfactory. We quote as follows:

2/12 to 2/16 low common	60-62½
2/26 to 2/28 common	67½-70
2/12 to 2/20 1/4 blood	70-72½
2/26 to 2/28 1/4 blood	72½-75
2/32 to 1/4 blood	75-77½
2/20 3/8 blood	82½
2/26 3/8 blood	82½-85
2/30 3/8 blood	85
2/36 3/8 blood	85-87½
2/40 1/2 blood	1.00-1.02½
2/40 delaine	1.15-1.17½
2/50 delaine	1.17½-1.20
2/40 Australian	1.22½-1.25
2/50 Australian	1.27½-1.30
2/60 Australian	1.42½-1.45
2/24 lustre	85
2/28 lustre	87½
2/30 and 3/32 lustre	90-92½
2/36 lustre	97½-1.00
1/24 worsted and 80s single cotton for raincloths	1.00-1.05
1/24 worsted and 120 single cotton for raincloths	1.15-1.20

FRENCH SPUN YARN.

1/20 1/4 blood	78-80
1/20 high 1/4	85-87
1/20 3/8 blood	92½-95
1/20 1/2 blood	92½-1.00
1/20 high 3/8	90-92½
1/30 high 1/4 blood	87½-90
1/30 3/8 blood	92½-95
1/30 1/2 blood	1.02-1.05
1/40 1/2 blood	1.05-1.07
1/50 delaine	1.20-1.22
1/40 Australian	1.25-1.30
1/50 Australian	1.30-1.35
1/60 Australian	1.40-1.45
1/70 Australian	1.45-1.50

*Rhode Island, Georgiaville. Construction work has started on the addition to the Bernon Mills. E. K. Watson Co of Warren has contract.

CHENEY BROTHERS

Silk Manufacturers. So. Manchester, Conn.

Trams, Organzine and Spun Silks in the hank, or on spools and cones for woolen manufacturers.

Silks for electrical uses, insulation and special purposes made to order.

Knitting Silks, Ribbons and Piece Goods for Trimming Knit Goods.

Dress Silks, Satins, Linings, Printed Pongees, Foulards and Decorative Silks; Upholstery Goods, Ribbons, Sashes, Plushes and Velvets.

WILLIAM RYLE & CO.,

Foreign and Domestic

Spun Silk Yarns and Noils.

Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.

54 Howard St., cor. Mercer St., NEW YORK.

SAUQUOIT SILK MFG. CO.,

INSULATING AND BRAIDING SILKS.

ORGANZINE, TRAM & HOSIERY SILKS.

Fast Dye Organzines for Woolen Manufacturers a Specialty.

Mills: Bethlehem, Pa., Phila., Pa., Scranton, Pa. New York Representatives, Wm. Ryle & Co., 54 Howard St.—Phila. Office, 4015 Clarissa St., Nicetown.—Chicago Office, 188-190 Market St.—Boston Office, 78 Chauncy St.

Crochet Lace Edgings

Spun Silk, Splicing Yarn, Mercerized Yarns, Cotton Warps, Sewing Threads, Tapes, Braids, Domets, Cambrics, Silesias.

Write for Prices and Samples.

George W. Chapin, 229-231 Church St., Philadelphia.

The Rag and Shoddy Market.

Seldom has less business been in evidence in the rag and shoddy market than during the past month. Woolen mills are running on short time or are shut down entirely. The conditions that now tend to depress the wool market have a like influence on the market for wool substitutes. Some small lots of desirable grades have been picked up by manufacturers who have run short of special grades. There is no disposition to speculate, the effort being to keep stocks down to the lowest possible amount.

There is very little demand for the small quantity of wool waste coming on the market. Cotton waste is also in poor demand. We quote as follows:

SHODDIES AND EXTRACTS.

White yarn, best all wool	45-47¾
White knit, all wool, best fine	30½-40½
White knit, No. 2	31-37
Light yarn, extra fine	30-36
New pure indigo blue	31-32½

Merino.

Fine light, all wool	25½-26½
Medium light, all wool	16-18
Fine black, all wool	26-30½
Fine dark, all wool, best grade	21-22
Medium dark, all wool, No. 2	15-17½
Red knit stock, strictly all wool	21-22
Red flannel, all wool	
Dark blue for hosiery, strictly all wool, No. 1	20-23½
Dark blue for hosiery, not all wool, No. 2,	15-17½

WOOLEN RAGS.

Fine merchant tailors	10½-12½
Choice light colors	15½-17½
Browns	12-14
Blacks	10-12½
Fine blues, plain	9-12½
Fine dark	10-13½
Medium dark	6½-8½

Worsteds.

Blue	14-17½
Black	20½-22

Serges.

New black	13-16½
New blue	

Flannels.

New scarlet	19-21½
New blue	15-18½
Cloakings	3-6

SOFTS AND KNIT STOCK.

Soft woolens, best	6-7½
Old white flannels	20-22½
Old red flannels	12-16
Old blue flannels	8-10½
Old plaids	8-9½
White stockings	20-23
White hood stock	20-22
Clear hoods	9-11½

William B. Charles,

Amsterdam, N. Y., U. S. A.

Cotton and Wool Wastes

COTTON YARNS

Contracts made with Cotton and Woolen Mills for Yearly Waste Production. Correspondence solicited. Shepperson's Code, 1878. Cable Address "Charles."

SHODDY W. H. H. SLACK & BRO. SPRINGFIELD, VT. **FLOCKS**

Established 1871

Trouble in the Card Room?

I HAVE had a great deal of experience in straightening out troubles in wool card rooms.

I believe I have worked in more wool card rooms than any other man in this country, and it has given me an unusual opportunity for noting all sorts of difficulties and the best way of overcoming them. Sometimes an outsider will quickly detect a point which the man always on the spot may overlook. Sometimes it is not necessary to visit the mills, as I can tell what the trouble is by correspondence. My charges are very reasonable and manufacturers and overseers may address me in confidence, as I am not looking for a permanent position as carder.

Clothing Cards a Specialty

SAM DRIVER, care Textile World Record, 144 Congress St., Boston.

Chemische Aniline Works

Manufacturers of

Anthracin & Coal Tar Products

24-26 Stone Street

New York

Blue stockings	8-10
Fancy stockings, No. 1	9-12½
Gray stockings	9-12
Black stockings	9-11½
Knit stock comforters	
Red knit	13-14½
Light gray knit	10-12
New light fancies	16
New fancies	11-13½

Merinos.

Light, fine	16-19
Light, coarse	6-8½
Fine, dark	11-13½
Coarse, dark	5-6
Blue	10-13
Black	13-15

FLOCKS.

Shear, fine white, all wool	10-12
Fine indigo blue, all wool	7-9½
Fine black and blue, all wool	7-8
Fine dark, all wool	2-5½
Gig, fine, all wool	2-4
No. 1 black, all wool cut	6-10½

*Massachusetts, Housatonic. The report that the Monument Mills contemplate building a new 3-story brick weave shed is incorrect.

*Massachusetts, New Bedford. The whole amount of the new capital stock voted by the directors of the Manomet Mills in November has been subscribed.

Massachusetts, New Bedford. Walter H. Langshaw, president and agent of the Dartmouth Mfg. Corp., is reported to have secured all the interests of John Duff, who was a large holder of the stock of the corporation.

*Massachusetts, New Bedford. At a meeting of the stockholders of the Bristol Mfg. Co. on May 25, the capital stock was increased from $700,000 to $800,000. As previously reported, the increase is to cover improvements already made and to give a larger working capital.

*Massachusetts, North Adams. All the receiver's certificates of the Arnold Print Works authorized by the Court at different times have been retired. There were $360,000 certificates of the Arnold Print Works proper, and $125,000 certificates of subsidiary companies. This indicates how rapidly the affairs of the Arnold Print Works are assuming their normal condition.

*South Carolina, Greenville. At a meeting of the stockholders of the Carolina Mills on May 10, it was decided to increase the capital stock from $100,000 to $200,000 in accordance with plans previously reported. This increase is to cover the enlargement reported in previous issues of the Advanced News which brought the total equipment up to 12,256 spindles and 356 looms. Print cloths and medium goods is the product.

Rhode Island, Central Falls. It is reported that the Waypoyset Manufacturing Co. will build a large addition to be used for manufacturing purposes. Cotton and silk novelty dress goods are manufactured on one hundred looms.

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ground	1.85-2.20
powdered	2.80-3.30
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Ammoniac, sal., gray	68½
Borax, bbls.	5-7
Brimstone, crude, ton	25-50
Copperas	64-85
Cream tartar, crystals	20-24
Fuller's earth, powdered, ton	18-22½
Glauber's salt	50-65
Potash, chlorate, crystals	10-12½
powdered	10-11½
carbonate	4-6½
Soda, bicarbonate	1.60-1.75
Soda, caustic, domestic, 60 per cent.	1.70-1.95
Sal., American	70-85
Vitriol, blue	5-6½
Acetate of soda	4½-6½
Acid, picric, best crystals	27½-28½
tannic, commercial	34-40
Albumen, egg	60-70
blood	26-35
Alizarine, red	18½
Aniline, oil	12½-15
salt crystals	13½
Bichromate of potash, American	9-10½
Bichromate of soda	7⅛-8
Bisulphite of soda	2½-3½
Cutch, mat	5½-6
Dextrine, imported potato	6-8½
Divi-divi, ton	45.00-67.00

New Jersey, Camden. The Joseph Hussong Co. has been incorporated with a capital of $25,000. The incorporators are Frank R. Hussong, Henrietta L. Hussong and Ernest L. Bartlet. The company will take over the business of Joseph Hussong, located at 613 Pearl St., dyers of worsted skein yarns and slubbing on 12 Hussong dyeing machines.

Pennsylvania, Philadelphia. The Grosser Knitting Machine Co., Max Nyedegger, whose main office is at 260 West Broadway, New York, has opened an office in Philadelphia at Room 435, Bourse Bldg. The Philadelphia business of this concern has increased to such an extent that this step is necessary to take care of the Philadelphia trade.

*Rhode Island, Bellefont. It is stated that the Whittle Dye Works will be started up in about a month as the New York parties previously reported considering a lease of the property will be ready to take possession at about that time.

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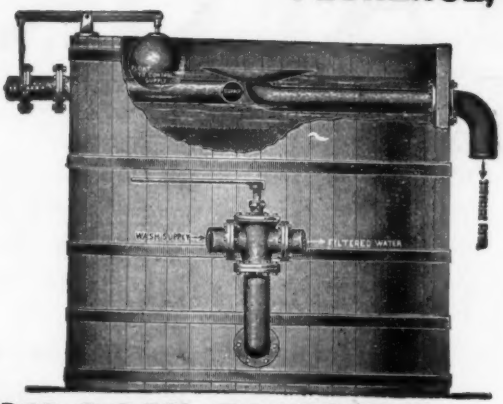

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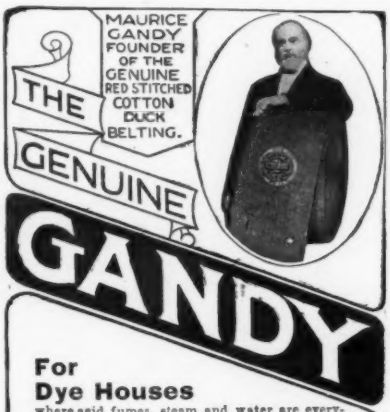

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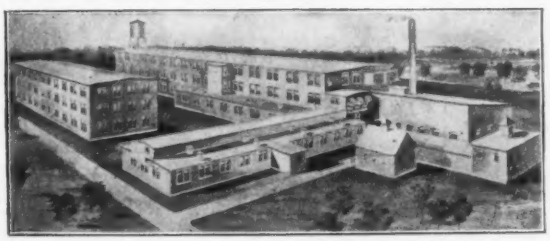

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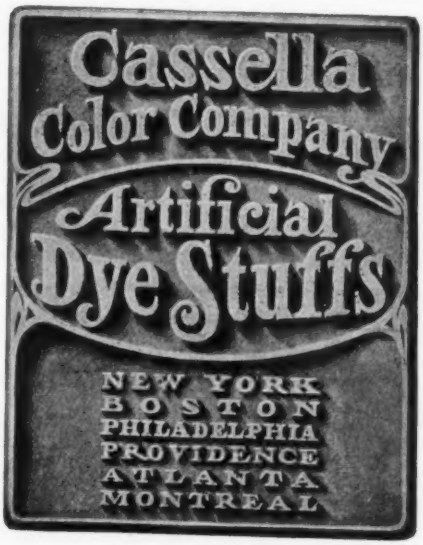

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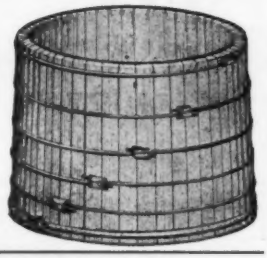

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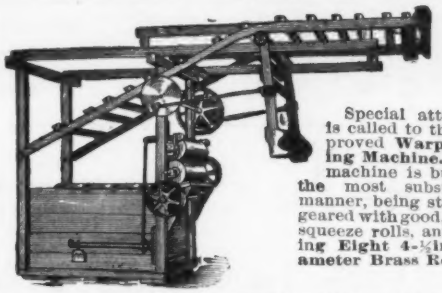

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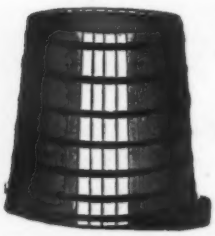

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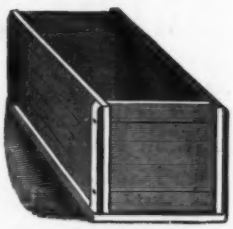

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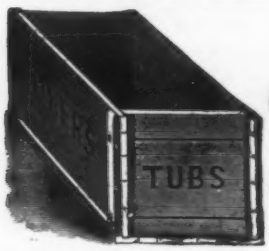

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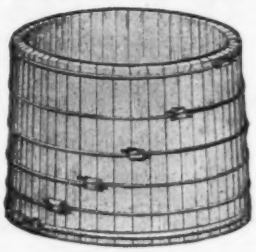

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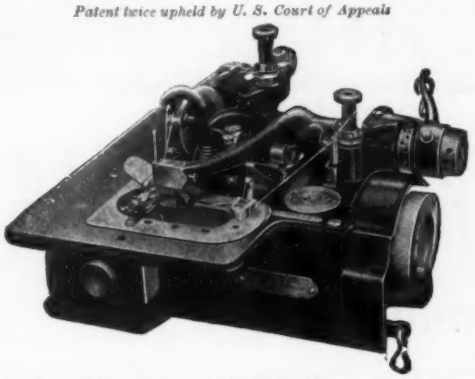

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Full Fashioned Hosiery Machines

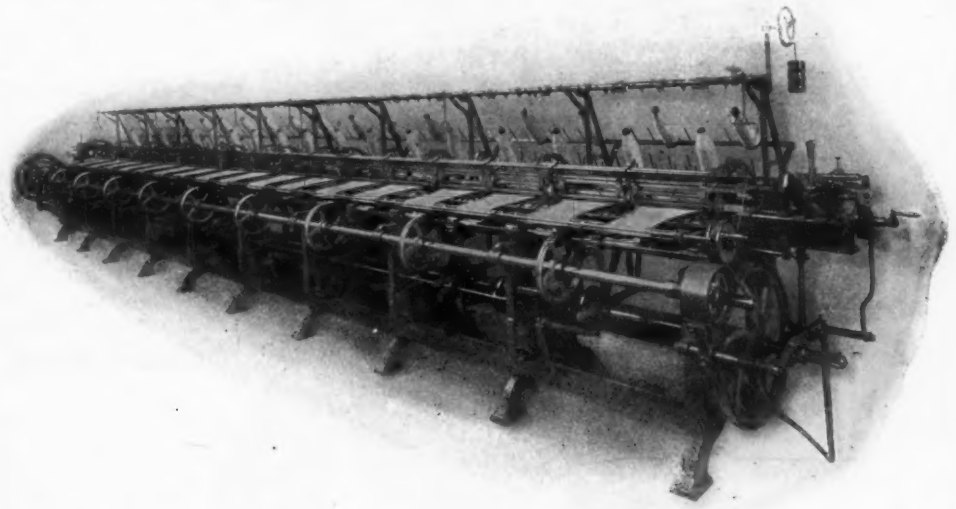
BUILT BY

SCHUBERT & SALZER

Largest Manufacturers of all classes of Hosiery Machines.

The plant, which is located in Chemnitz, Germany, declared by engineering experts and hosiery manufacturers to be the finest of its kind, is equipped with the most modern American and European machine tools, employing 1600 skilled workmen.

These machines have been proven the best constructed and most productive in the market for the manufacture of cotton, lisle and silk hosiery and since their introduction into this country 13 years ago have always been the leaders among a number of competitive makes, as upon trial they have fully borne out all that is claimed for them.



REFERENCES:

All the leading manufacturers of full fashioned hosiery in this country. Largest individual order for 65 eighteen section machines placed recently by the new million dollar concern, the Brown-Moore Hosiery Co. of Philadelphia.

AMERICAN REPRESENTATIVE:

OTTO WALTHER, = 507 Bourse, = Philadelphia.

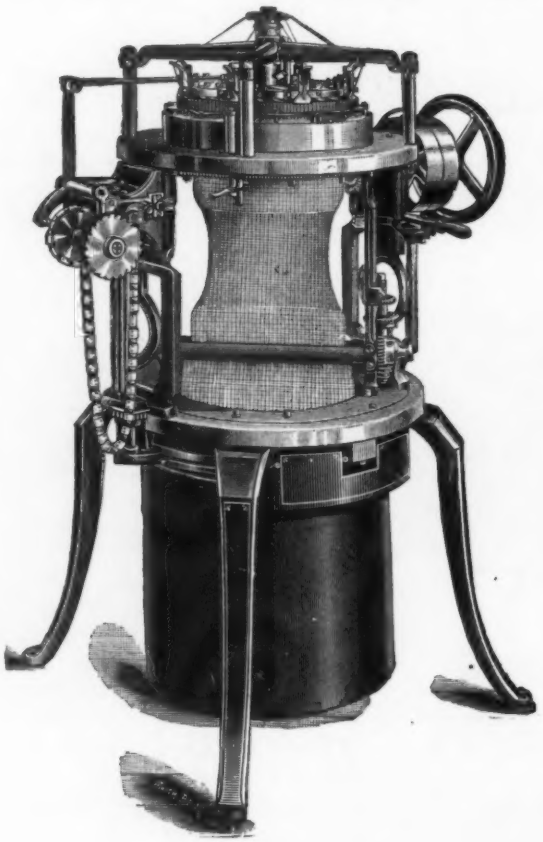
Wildman Manufacturing Co.

Norristown, Penn., U. S. A.

Manufacturers of

Circular Rib Knitting Machinery

Automatic
Stop
Motions



Electric
Cloth
Cutters

AUTOMATIC AND PLAIN

For all classes of Ribbed Hosiery, Underwear, Combination Suits, Sweaters, Etc.

THE GROSSER KNITTING MACHINE CO.

WOOL EXCHANGE
260 W. Broadway

MAX NYDEGGER

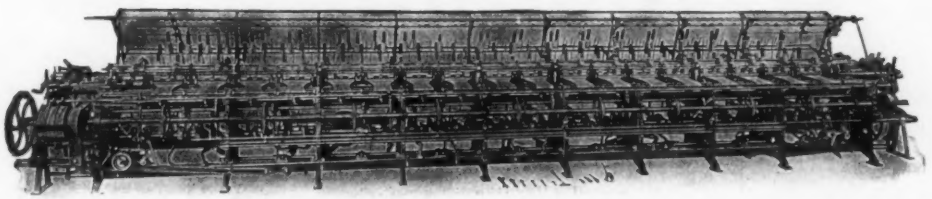
NEW YORK

PHILADELPHIA OFFICE 435 BOURSE BLDG.

All Special Machines for Any Article That Is Knit

Full Fashioned Hosiery Machines

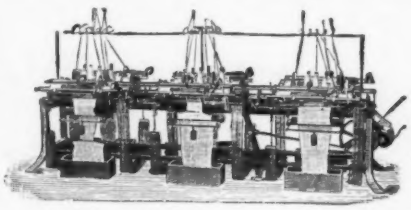
System **G. Hilscher, Chemnitz, Saxony**



18 Section "COTTON HILSCHER" Machine for Full Fashioned Hosiery, Silk, Cotton, Wool, etc.
Gold Medal, Paris, 1900 Numerous Patents Covering Special Improvements

GROSSER Flat Knitting Machines

For HAND Power or FULLY AUTOMATIC Power MACHINES. Most productive and best machines for Sweaters, Jackets, Blouses, Wool Hosiery, Gloves, Mittens, Sporting Goods in Plain, Fancy and Jacquard Work, Shaker Articles, etc. Large stock on hand. Power Machines to be seen in operation.

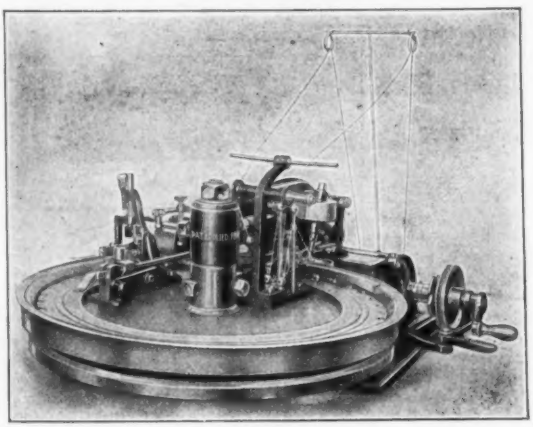


CIRCULAR FRENCH FRAMES

C. Terrot Söhne, Cannstatt, Würt, famous builders of the best Circular Frame for Finest Underwear, Fleece Linings, Gloves, Special á-jour (openwork) Fabrics, etc.

RASHEL MACHINES [Double Rip Warp Knitting Machines.]

For Fancy Goods in largest variety, Shawls, Capes, Caps, Borders, Fringes, Lace Work, etc., in silk, wool cotton.



The LOOPER THAT LOOPS!

Two thread lock stitch machine with reliable trimmer and raveller producing *indestructible, flat elastic* seam.
No Hosiery or Underwear plant up to date without this machine.

DIAMOND OVERSEAMERS

for all classes of selvege goods, Full Fashioned Hosiery, Underwear, etc.

FINISHING MACHINES for Knit Goods of all styles.

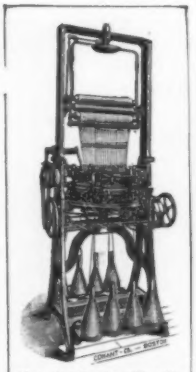
WINDERS for finest yarns.

Information, Samples and Specifications at Your Disposition

CHARLES COOPER

BENNINGTON, VERMONT.

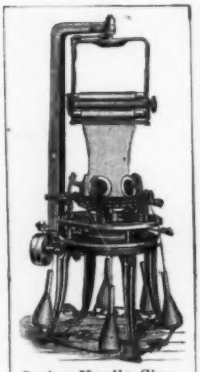
MANUFACTURER OF



Circular Spring Needle Rib Top Machine.

Knitting Machinery

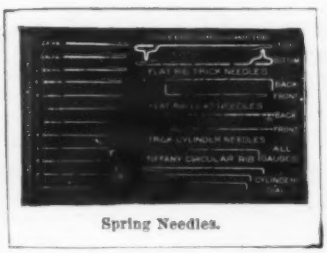
Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder.



Spring Needle Circular Plain Body Machine.

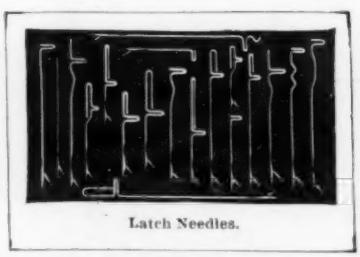
Spring Needle Cylinder Rib-Top Machines

For making Cuffs, Drawer Bottoms and Shirt Borders.



Spring Needles.

Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, Etc.



Latch Needles.

COLLARETTE ATTACHMENT.

AMERICAN REPRESENTATIVE.

G. H. ROGERS,
509 Clinton St., Hudson, N. Y.

EUROPEAN REPRESENTATIVE.

FELIX LEDERER.
Ix/4 Schubertgasse, Nr. 22, Vienna, Austria.

Higher Speed

To Reduce Cost of Production by Increasing Output of Operators

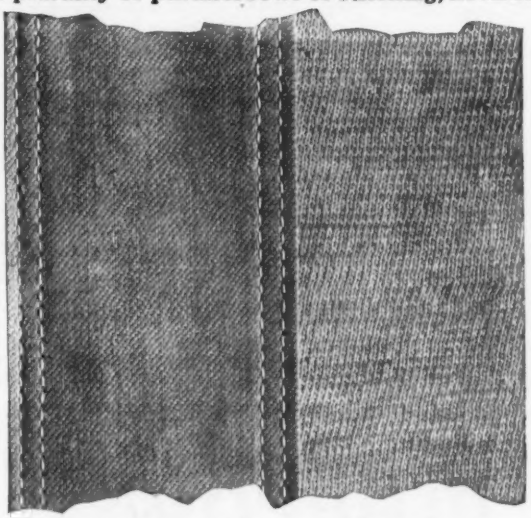
Higher Efficiency

USE

Multiple Needle Single Thread Stitching Machines

For all Multiple Needle Operations, whether for Ornament or for Service, where it is desired to have a plurality of parallel rows of stitching, needles spaced as desired

Yielding Bottom Presser Foot to be used where different thicknesses of Fabric are being Stitched Simultaneously



Special Fittings and Attachments now ready for Numerous Manifold Operations

Greater Simplicity

Style 16100 A-4 Needles-8-80-8 Gauge
Stitching Front Facings to Undershirts
One Operation

Greater Durability

Union Special Machine Company

BRANCHES
96 South St., Boston, Mass.
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BRANCHES
731 Arch St., Philadelphia, Pa.
806 Main St., Cincinnati, Ohio
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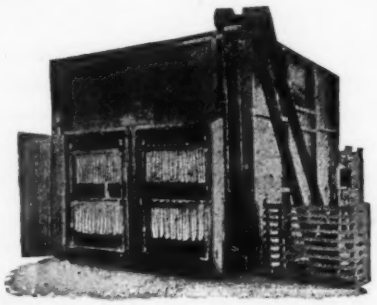


Bailey's Hot Air System of Yarn Drying has no equal

where large capacity is required. Leaves the yarn in fine condition for winding and weaving, makes little waste, is simple and very effective. My *cold air system* is unequalled where output is not *the* all important thing.

Write for particulars.

Dye Sticks, Dye Poles, Wood Rolls, Fans and Trucks.

FRANK BAILEY, Manufacturer, Works at Braddock. P. O. Ad., Cedar Brook, Camden Co., N. J.

JAMES TAYLOR, 121 Arch Street, Philadelphia Pa.

ALL KINDS OF NEW AND SECOND HAND **KNITTING MACHINERY**

A RARE OPPORTUNITY TO BUY.

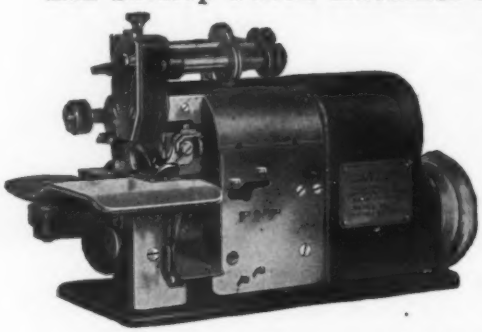
60 Lamb and Grosser sweater machines.
30 Standard "B" 3¼" Knitters, 200 Needles.
20 " "B" 3¼x4" " 188 "
54 " "B" Knitters for sizes.
24 Mayo "Acme" " " "
14 National Knitters, 3¼ in., 216 needles.
7 " " 3½ " 200 "
60 Lamb & German flat machines.
2 Double Ribb machines
7 Latest Improved Necktie machines.
1 Crane Style Collarette Machine 20" 16 to in.
1 Rotary Fire Pump. 3 small Pumps.
2 Toque machines.
4 Hosiery Dryers.
1 Cornely Hosiery Embroidery Machine.
500 Dozen hosiery shaping boards.
1 Caligraph Typewriter
1 5 h. p. Gen. Electric Motor, 3 phase.
1 ½ h. p. Electric Motor.
1 Singer Nat. Button-hole machine.
500 Payne Winder Bobbins.
100 ¾ Aut. Knitters, various makes and sizes.
1 Payne 48 Spindle Cop Winder.
4 Abel 36 " " "
1 Huse 50 " " "
1 Uhlinger 42 in. Extractor, friction driven.
1 Cleveland 42 in. " belt "
1 Merrow Shell Crochet No. 35 B.
1 Crawford 21 plate Press 31 x 44 (hollow plate, screw press).
1 Pownall Screw Press 34 x 52 in.
1 Baling Press 36 x 48.
5 Band folding and cutting machines.
1 Curtis & Marble Napper, 66 in.
1 McCreary Napper, 60 inch, 16 rolls.
8 Jones Fleecers, 24 x 36 in.
6 Platform Scales, on wheels.
2 Singeing Machines.
1 Hosiery Printing Press.
4 Hosiery Lever Presses.
42 Union Spec. Sewing Machines, various styles.
50 Loopers and Seamers, all makes.
60 Ribbed Underwear machines.
300 Hosiery Ribbers and Sleevers.

WRITE FOR COMPLETE LIST. APPRAISEMENTS A SPECIALTY.
We are always in the market to buy good second-hand Knitting and Finishing Machinery.

The Merrow

FAST
DURABLE
Light Running

High Speed Overseaming, Overedging and Scallop Stitch Machines are



OUR NEW STYLE 60 MACHINE for Trimming and Overseaming in one Operation produces the strongest, best Seam and does it with the greatest economy.

USE STYLE 18 for Horse Blankets.
STYLE 17 or 22 for Bed Blankets.
STYLE 35 B SHELL, for Necks and Fronts of Rib Goods, produces the most showy, substantial finish.

Send for Catalogue and Samples.

THE MERROW MACHINE CO. HARTFORD, CONN.

Knickerbocker Building, Sixth and Arch Sts., Phila. Room 321, 467 Broadway, New York

EXCELSIOR KNITTING MACHINE MFG. CO.

Meadow and Washington Streets

ALLENTOWN, PENNA.

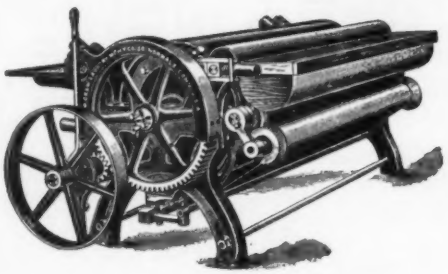
BUILDERS OF

Full Automatic Knitters

With or without **Transferring Device**

ALL SIZES AND GAUGES, 2 1-4 INCH TO 4 INCH

Of Proven Efficiency and Economy



AUTOMATIC IRONING AND PRESSING MACHINES FOR KNIT GOODS

No Broken Buttons

This machine irons and presses ribbed and flat underwear and other knit goods, giving a fine, smooth, attractive finish, which cannot be as easily obtained in any other way. It does not break buttons and can be adjusted to all grades. It is so easy to operate, so inexpensive to maintain and is of such large capacity that knitting mills throughout the country effect fully 50 per cent. saving through its use. For particulars, prices and list of knitting mills using our machinery address us at our factory.

Saves Half Your Expense

The **Consolidated** H. S. & L. M. **Company**

South Norwalk, Conn.

Sole Manufacturers of the "Craw" Automatic Ironing and Pressing Machine

The Invincible

Full Automatic.

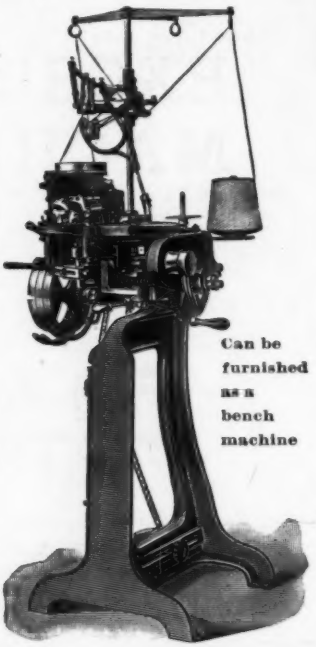
"The KNITTER that KNITS"

THE LARGEST PRODUCER OF PERFECT WORK.
SIMPLE, POSITIVE AND EASY TO OPERATE.

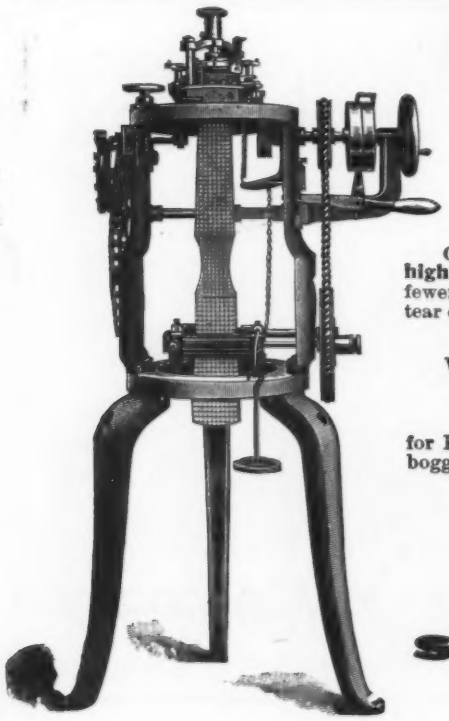
E. JENCKES MFG. CO.

Pawtucket, R. I.

PHILADELPHIA OFFICE,
101 North Sixth St.



Can be furnished as a bench machine



High Speed Rib Knitting Machinery.

Our latest model machinery has been designed to run at very high speed, giving large production. This is accomplished with fewer seconds, less breakage of needles, less jar and wear and tear on machines than has been customary at lower speeds.

We also make Special

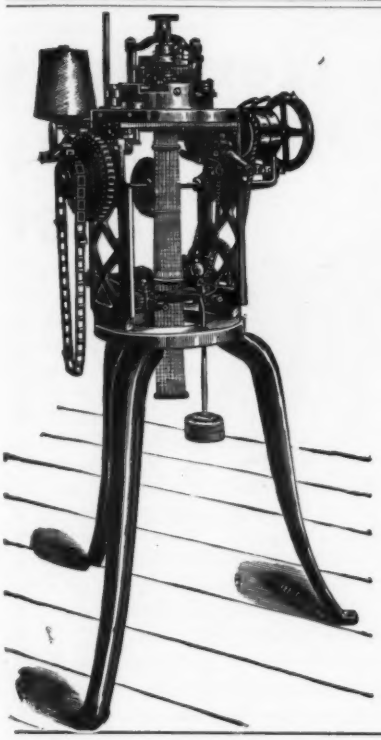
STRIPING AND DESIGNING MACHINES

for Fancy Golf Stockings, Bathing Suits, Sweaters, Toques, Toboggan Caps, Skirts, etc.

Our Machinery gives large production at low cost and enables manufacturers to meet the market always and make a profit.

STAFFORD & HOLT,

LITTLE FALLS, N. Y.



H. Brinton & Co.

213-215 Race Street, Philadelphia, Pa.

BUILDERS OF

Knitting Machinery

For HOSIERY and UNDERWEAR.

Complete Estimates Furnished. Send for Particulars.

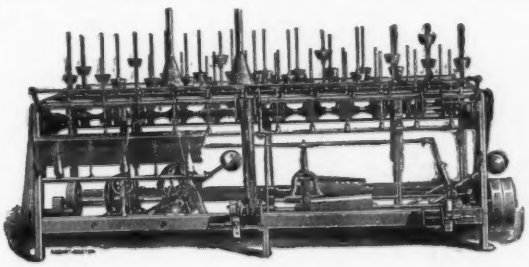
The cut shows our Improved Automatic Ribber with Welt and Slack Course for Half Hose, Tops and Ribbed Legs.

CIRCULAR KNITTING MACHINES

Either plain or full automatic, with stop motions complete. 4 to 24 feeds f r

RIBBED UNDERWEAR

Automatic Racking and Striping Machines for Sweaters, Cardigans, Collarettes, Cuffs and Anklets.



ALSO BUILDERS OF THE WELL-KNOWN

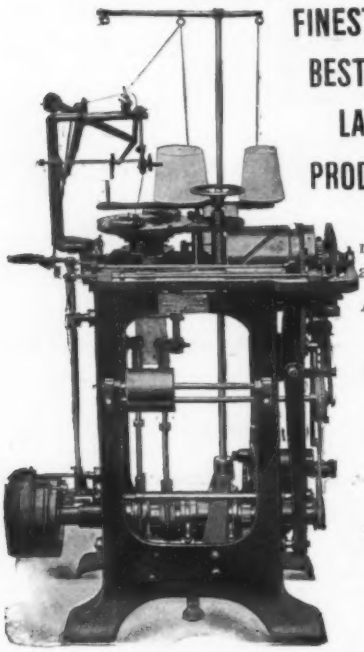
ABEL WINDERS, SEAMERS and LOOPERS.

LEIGHTON MACHINE CO., - Manchester, N. H.

"NATIONAL"

Stands for

FINEST GAUGES
BEST FABRIC
LARGEST
PRODUCT ON



Greatest Variety of Laces and Novelties.

Allautomatic.

Lowest Cost for Operating

Also
Rib Knitting Machinery, Overedge, Crochet and Shell Stitch.

NATIONAL AUTOMATIC KNITTER CO.

728 Cherry Street, PHILADELPHIA, PA.

The New Boss Seamless Knitter

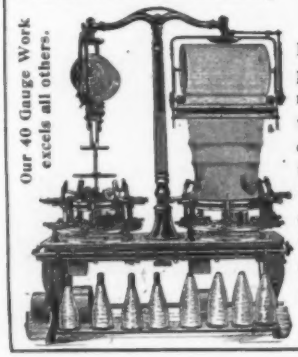
Do you want the biggest production with the least menders, for the least money? If so, write to the Boss Knitting Machine Works for their circular with full directions. There is no cylinder to be handled. We use only one cylinder and transfer device for half hose or ladies' hose. This machine beats them all. Has no equal for simplicity and durability. Makes 300 revolutions per minute. Built in sizes from 2¼ to 5½; from 40 to 224 needles. Automatic in heel and toe. It is the strongest built knitter on earth.

Send for prices and particulars.

THE BOSS KNITTING MACHINE WORKS,
Cor. Elm and Reed Sts., Reading, Pa.

We are the Oldest Manufacturers

of this Design of Spring Needle Knitting Machine in this Country



Our 40 Gauge Work excels all others.

40 years' experience

Do not be misled by people who became manufacturers in 1903 without any previous experience who are trying to represent that they are the oldest manufacturers. Investigate. Call and see our fine gauge work.

Robt. W. Gormly & Co.
Troy, N. Y.

"Acme" and "Hemphill"

SEAMLESS HOSIERY

Knitting Machines

built by

Mayo Knitting Machine & Needle Company

Franklin, N. H.

Answer all purposes in the *most reliable*, *up-to-date*, and *economical* manner. Write us for full particulars.

Manufacturers like our Latch Needles

because we make a superior grade of needles.

Philadelphia Office, Knickerbocker Bldg.

STANDARD MACHINES FOR HOSIERY MAKING

The STANDARD F, with attachments, can make any and all of these fabrics:

Plain Goods
Plaited Work
Three Color Stripes
Tipped Heel and Toe
White Foot
Changed Heel and Toe
Garter Top
Loopers Slack Course

Most Stockings—Best Fabrics—Longest Life

Standard Machine Company

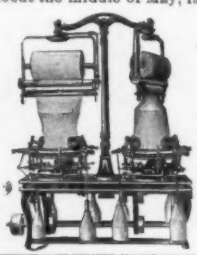
OFFICE AND SHOW ROOMS

330-340 North 12th St., Philadelphia

We Are the Oldest Manufacturers
IN THE WESTERN HEMISPHERE
Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:
Cross Question 123. How long have you been a manufacturer of knitting machines? Answer. I started in this business about the middle of May, 1900.



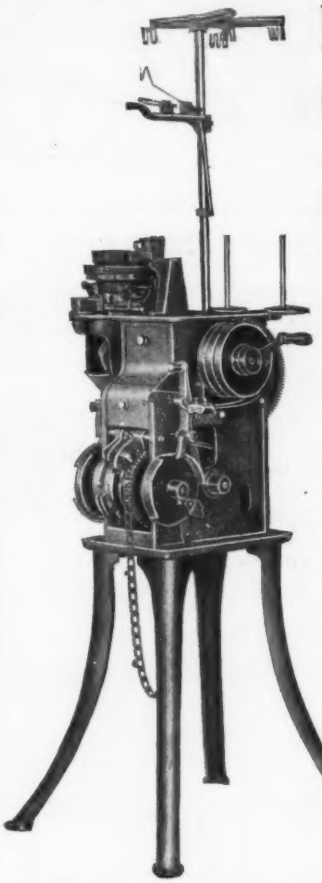
Tompkins Knitter

This design was adopted in 1875.
BUSINESS ESTABLISHED in 1846, before ROBERT W. GORMLY Was born, according to his testimony in the case above cited.

"THE BANNER"
Hemphill's Latest

A FULL AUTOMATIC MACHINE

Specially adapted to



Plaited Goods
and
String Work
also
High Splice
and
Double Sole

Largest Production
More Yarn Changes
Highest Speed
Simplest
Least Repairs

Produces a Superior Quality of Work.

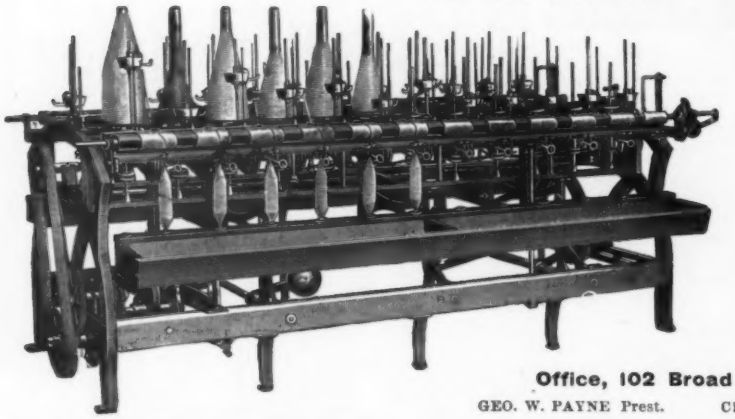
MANUFACTURED BY THE

Hemphill Mfg. Co.

131 Clay Street, PAWTUCKET, R. I.

OVER 1,900 PAYNE WINDERS IN USE

By Hosiery Manufacturers,
Wind for Cop, Skein or Bobbin.



Improved

Upright Spoolers,

To Spool from Cop, Skein or Bobbin.

Doubling Spoolers for doubling 2, 3, or more ends into one.

Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers, Warp, Spool, Spooler, Guides, Bolsters and Stops Made and Repaired at Short Notice.

GEO. W. PAYNE CO.,

[Est. 1865. Inc. 1903.]

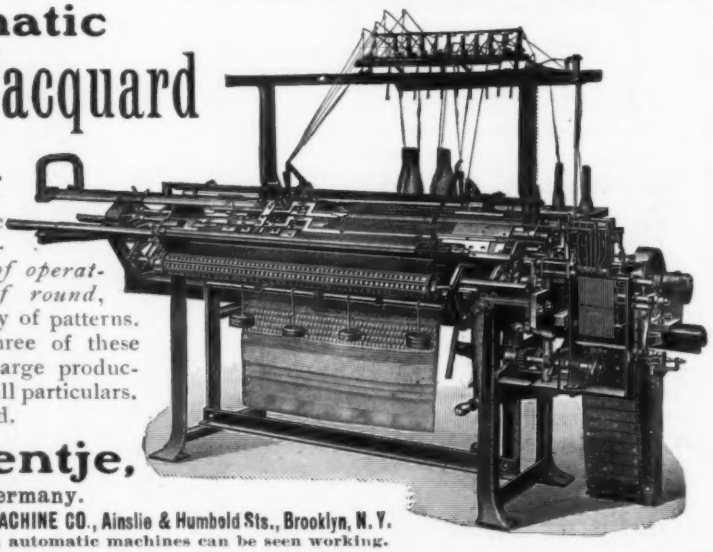
Office, 102 Broad Street, Pawtucket, R. I.

GEO. W. PAYNE Prest. CLINTON F. PAYNE, Sec'y. and Treas.

Full Automatic
Noppen & Jacquard

for high-grade sweaters, jerseys, etc. Latest improvements

Recognized as the best in the market. With Jacquard attachment allowing *change of operating mechanism every half round*, therefore unrivaled in variety of patterns. One operator attends to three of these machines. High speed. Large production. Ask for samples and full particulars. State gauge and size you need.



Claes & Flentje,

Mühlhausen Thr., Germany.

Representatives, AINSLIE KNITTING MACHINE CO., Ainslie & Humbold Sts., Brooklyn, N. Y.

Where all kinds of our hand and automatic machines can be seen working.

HEPWORTH & CO.'S

Patent Single-Stitch

LOOPING MACHINE.

Needle working from the inside, avoiding the breaking of needles and points and picking up the metal.

Single and Double Stitch, or Both Combined.

JOHN W. HEPWORTH & CO.,

N. W. Cor. Lehigh Ave. and Mascher Street,

PHILADELPHIA.

PAXTON & O'NEILL'S

Full Automatic Knitter

FOR ALL KINDS AND GAUGES OF SEAMLESS HOSIERY.
RANGE ON HALF HOSE AND LADIES FROM 260 NEEDLES DOWN.

3-4 AUTOMATIC KNITTER

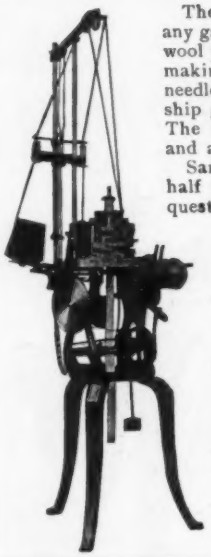
With Lace Effects.

Exclusive rights to BROWN'S LACE ATTACHMENT.

537-39-41 North 3d St., - - - - - PHILADELPHIA.

Use the Ruth

Ribber and Stop Motion



The Ruth Ribber will produce any gauge goods from cotton or wool yarn at a high speed without making bad work or breaking needles. Material and workmanship guaranteed to be first-class. The machine is easy to operate and adjust.

Samples of 240 needle gauze half hose tops furnished by request.

Many mills are pleased with our machine and we are sure we can please you.

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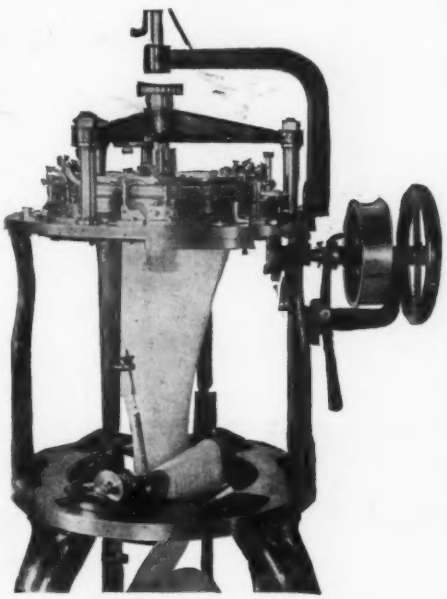
Spring and Latch Needle Machines for both rib and plain work, producing a great variety of fabrics. Patent removable hardened Wing Burr Wheels.



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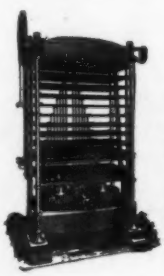
The CRAWFORD



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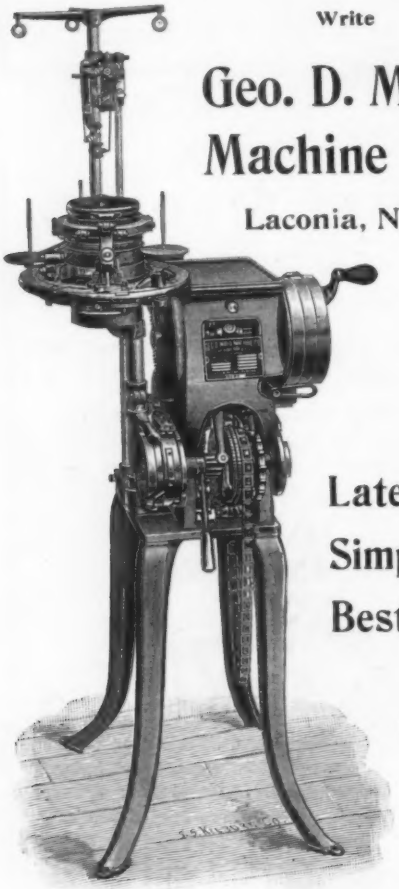

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Circular Rib Knitting MACHINERY

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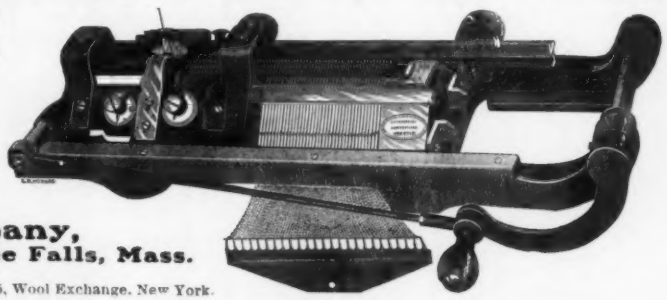

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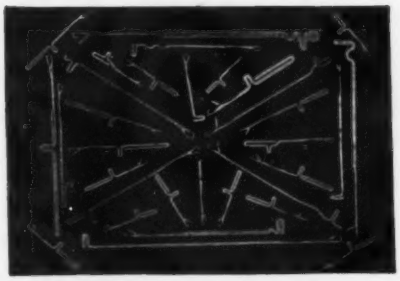

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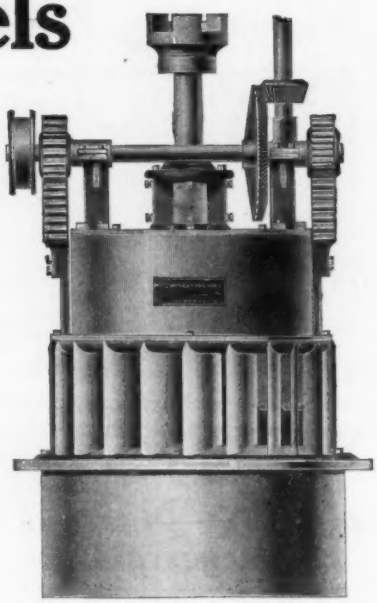

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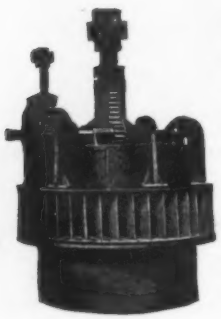

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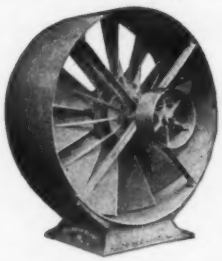

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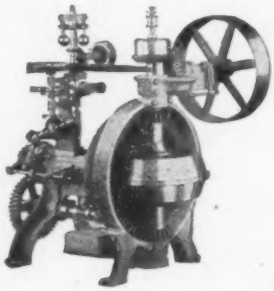

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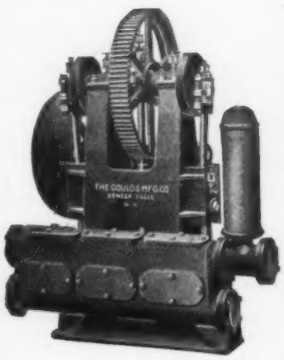

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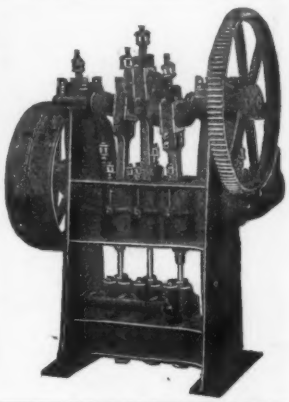

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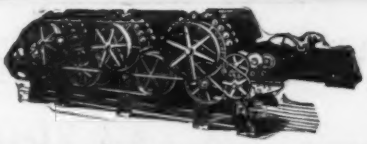

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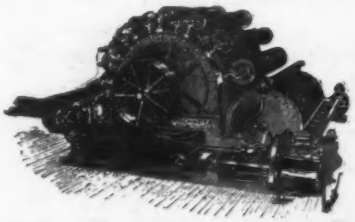

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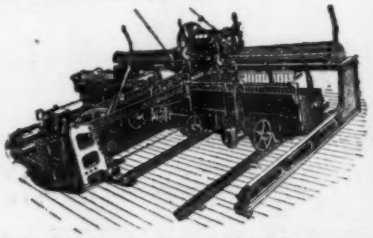

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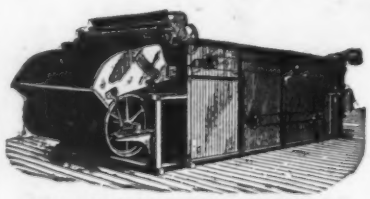
For Cotton Stock, Wool Stock, Rags, Yarn, Cloth Underwear, Stockings, etc.



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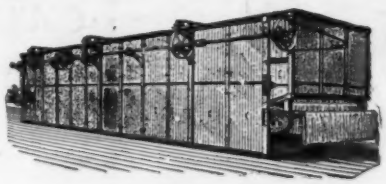

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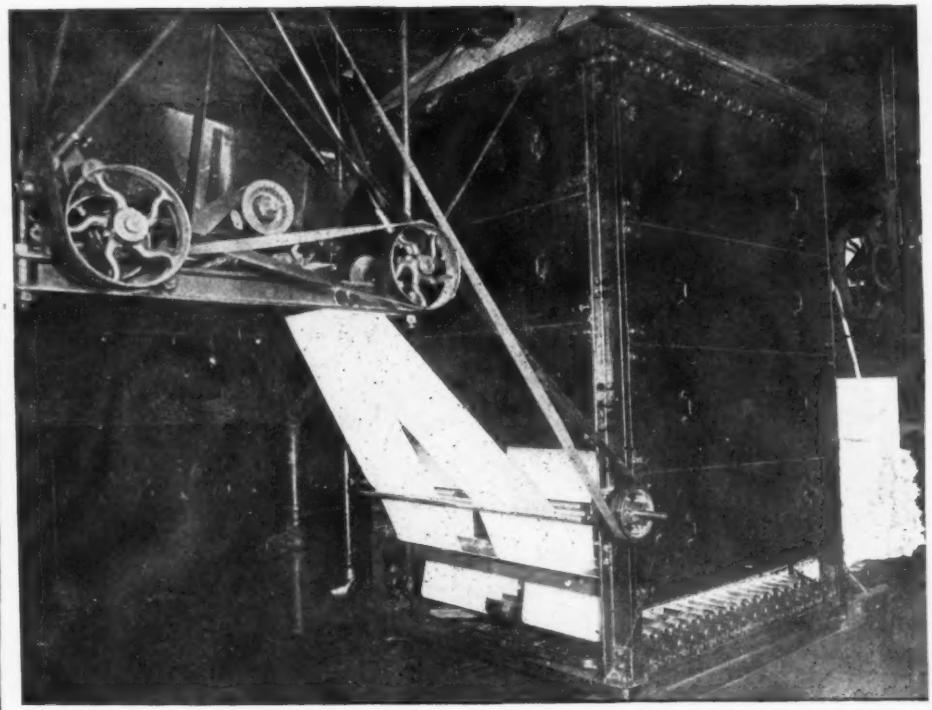

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